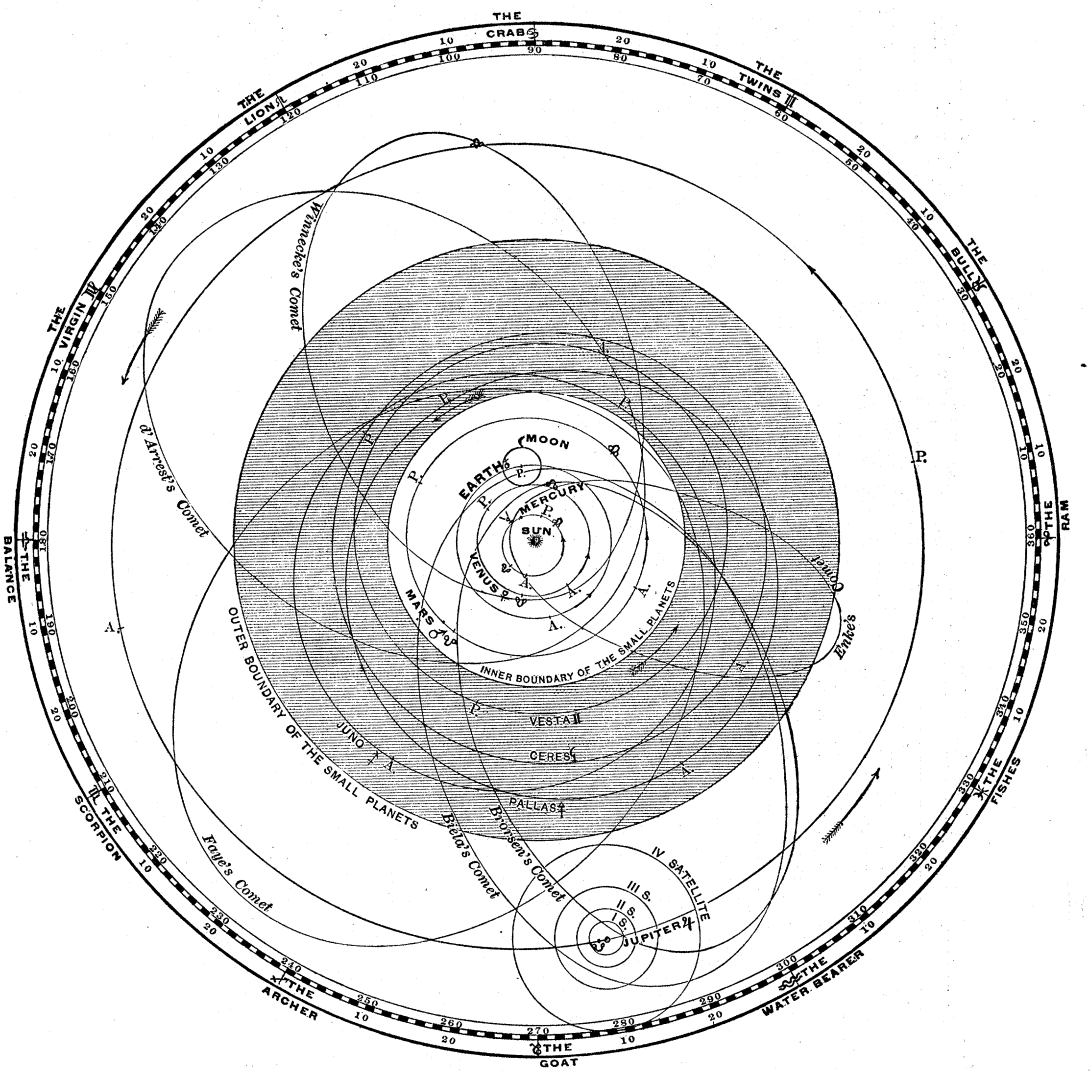


MAP OF THE SOLAR SYSTEM.

THE orbits of the five inner planets and of many of the periodic comets are given in the accompanying diagram, which is drawn approximately to scale, the orbits of the satellites being enlarged to prevent confusion. Saturn would appear at a distance of 3.62 inches from the sun, if its orbit were drawn on the same scale, Uranus at a distance of 7.29 inches, and Neptune at a distance of 12.28 inches. The shaded portion indicates the region within which the asteroids, or smaller planets, are found; and the orbit of the largest of these, and those longest known, — Vesta, Ceres, Pallas, and Juno, — are given. The earth has one moon; Mars, two; Jupiter, four; Saturn, eight; Uranus, four; and Neptune, one. Ceres, the first asteroid, was found in 1801, Pallas in 1802, Juno in 1804, and Vesta in 1807. The first asteroids discovered ranged between 300 and 600 kilometres in diameter; while the smaller ones, which have been more recently found, often are not more than from 20 to 50 kilometres in diameter (10 to 25 miles). The distance of the sun from the earth is said to be 92,500,000 miles; and the distance of the nearest fixed star, if given on the same scale as the diagram, would be 78,000 inches (about a mile and a quarter).

"When icicles hang by the wall,
And Dick the shepherd blows his nail,
And Tom bears logs into the hall,
And milk comes frozen home in pail" —
SHAKSPEARE.

JANUARY, 1885.

"*Announced by all the trumpets of the sky,*
Arrives the snow, and, driving o'er the fields,
Seems nowhere to alight. . . . The housemates sit
Around the radiant fireplace, enclosed
In a tumultuous privacy of storm." EMERSON.

Mean time is used unless otherwise specified.

Day of Year.	Day of Month.	Day of Week.	Moon's Constellation.	PLANETARY PHENOMENA.	Latitude of Boston. Sun Rises. H. M.	Sun Sets. H. M.	Moon Rises. H. M.	Latitude of Washington. Sun Rises. H. M.	Sun Sets. H. M.	Moon Rises. H. M.	Latitude of Charleston, S.C. Sun Rises. H. M.	Sun Sets. H. M.	Moon Rises. H. M.	High Water, New York. (Standard Time.) Morn. H. M.	Eve. H. M.
1	1	Th.	♑	☽ 1st. Algenib s. 5.20 A.	7 30	4 39	5 41	7 19	4 49	5 50	7 3	5 6	6 2	7 53	8 35
2	2	Fr.	♑	Venus rises 5.8 M.	7 30	4 40	6 52	7 19	4 50	6 59	7 3	5 7	7 10	8 43	9 21
3	3	Sa.	♑	☌ ☿ ☉ inferior.	7 30	4 41	8 2	7 19	4 51	8 8	7 3	5 7	8 16	9 32	10 14
1. Sunday after New Year.				Day's Length:	9h. 12m.			9h. 33m.			10h. 5m.				
4	4	Su.	♑	☌ ♃ ☾.	7 30	4 42	9 11	7 19	4 52	9 15	7 3	5 8	9 19	10 21	11 8
5	5	M.	♑	Polaris s. 6.18 A.	7 30	4 43	10 18	7 19	4 53	10 20	7 4	5 9	10 21	11 8	. . .
6	6	Tu.	♒	☌ stationary; ☌ ☉ ☾.	7 30	4 44	11 22	7 19	4 54	11 22	7 4	5 10	11 20	0 2	0 0
7	7	W.	♒	☽ 7th. ☾ in ♌.	7 29	4 45	Morn.	7 19	4 55	Morn.	7 4	5 11	Morn.	0 54	0 53
8	8	Th.	♒	Mars sets 5.25 A.	7 29	4 46	0 23	7 19	4 56	0 21	7 4	5 11	0 17	1 53	1 49
9	9	Fr.	♒	☿ gr. Hel. Lat. N.	7 29	4 47	1 23	7 19	4 57	1 20	7 4	5 12	1 13	2 54	2 51
10	10	Sa.	♒	Achernar s. 6.11 A.	7 29	4 48	2 22	7 19	4 58	2 17	7 4	5 13	2 8	3 54	3 55
2. 1st Sunday after Epiphany.				Day's Length:	9h. 21m.			9h. 41m.			10h. 11m.				
11	11	Su.	♏	Hamel s. 6.34 A.	7 28	4 49	3 18	7 18	4 59	3 12	7 3	5 14	3 1	4 51	4 58
12	12	M.	♏	Jupiter rises 8.23 A.	7 28	4 50	4 11	7 18	5 0	4 4	7 3	5 15	3 51	5 40	5 54
13	13	Tu.	♏	☌ ☿ ☾; ☾ in apogee. ♃.	7 28	4 51	5 1	7 18	5 1	4 53	7 3	5 16	4 40	6 24	6 41
14	14	W.	♐	☌ ☿ ☾; ☿ stationary.	7 27	4 53	5 49	7 18	5 2	5 41	7 3	5 17	5 28	7 0	7 22
15	15	Th.	♐	Algol s. 7.18 A.	7 27	4 54	6 34	7 17	5 3	6 26	7 3	5 18	6 14	7 35	7 57
16	16	Fr.	♑	● 16th. ☌ ♂ ☾.	7 26	4 55	Sets.	7 17	5 4	Sets.	7 2	5 19	Sets.	8 4	8 29
17	17	Sa.	♑	Aldebaran s. 8.39 A.	7 26	4 56	6 33	7 16	5 5	6 39	7 2	5 19	6 49	8 31	9 0
3. 2d Sunday after Epiphany.				Day's Length:	9h. 32m.			9h. 50m.			10h. 18m.				
18	18	Su.	♑	Saturn sets 4.31 M.	7 25	4 57	7 33	7 16	5 6	7 38	7 2	5 20	7 44	8 58	9 33
19	19	M.	♒	Capella s. 9.10 A.	7 24	4 59	8 33	7 15	5 8	8 36	7 1	5 21	8 40	9 30	10 7
20	20	Tu.	♒	Rigel s. 9.7 A.	7 24	5 0	9 34	7 15	5 9	9 35	7 1	5 22	9 36	10 5	10 43
21	21	W.	♒	☾ in ♉.	7 23	5 1	10 37	7 14	5 10	10 37	7 1	5 23	10 34	10 42	11 28
22	22	Th.	♒	Canopus s. 10.11 A.	7 22	5 2	11 42	7 14	5 11	11 40	7 0	5 24	11 35	11 24	. . .
23	23	Fr.	♓	☾ 23d. Uranus rises 9.58 A.	7 22	5 4	Morn.	7 13	5 12	Morn.	7 0	5 25	Morn.	0 21	0 16
24	24	Sa.	♓	☌ ☿ ♀; ☌ ♅ ☾.	7 21	5 5	0 48	7 12	5 13	0 40	6 59	5 26	0 36	1 18	1 17
4. 3d Sunday after Epiphany.				Day's Length:	9h. 45m.			10h. 2m.			10h. 28m.				
25	25	Su.	♓	Sirius s. 10.18 A.	7 21	5 6	1 55	7 12	5 14	1 49	6 59	5 27	1 40	2 26	2 30
26	26	M.	♈	☿ gr. elong. W. 24°53′; ☌ ♄ ☾.	7 20	5 7	3 2	7 11	5 15	2 55	6 58	5 28	2 44	3 38	3 51
27	27	Tu.	♈	Neptune sets 1.41 M. ♎.	7 18	5 9	4 7	7 10	5 17	3 59	6 58	5 29	3 46	4 49	5 8
28	28	W.	♈	☾ in perigee.	7 17	5 10	5 8	7 10	5 18	5 1	6 57	5 30	4 47	5 51	6 17
29	29	Th.	♈	♅ stationary.	7 16	5 11	6 2	7 9	5 19	5 56	6 57	5 31	5 44	6 47	7 17
30	30	Fr.	♉	○ 30th. ☿ in ♉.	7 15	5 13	Rises.	7 8	5 20	Rises.	6 56	5 32	Rises.	7 39	8 11
31	31	Sa.	♉	☌ ♃ ☾.	7 14	5 14	6 47	7 7	5 21	6 53	6 55	5 33	6 57	8 27	9 2

MOON'S PHASES. (*Standard Time.*)

	EASTERN. d. h. m.	CENTRAL. d. h. m.	MOUNTAIN. d. h. m.	PACIFIC. d. h. m.
Full Moon	1 0 26 M.	. . . . .	. . . . .	. . . . .
Last Quarter	7 10 36 A.	7 9 36 A.	7 8 36 A.	7 7 36 A.
New Moon	16 3 36 M.	16 2 36 M.	16 1 36 M.	16 0 36 M.
First Quarter	23 8 26 A.	23 7 26 A.	23 6 26 A.	23 5 26 A.
Full Moon	30 11 19 M.	30 10 19 M.	30 9 19 M.	30 8 19 M.

First Month. *31 Days.*

BIRTHDAYS OF SCIENTIFIC CELEBRITIES.

1810. — Charles Ellet, American engineer.
1822. — R. J. E. Clausius, German physicist.
1819. — Piazzi Smyth, Scotch astronomer.

1743. — Sir Joseph Banks, English naturalist.
1643. — Sir Isaac Newton, Eng. mathematician.
1818. — Thomas Hill, American mathematician.
1825. — J. E. Hilgard, American geodesist.
1833. — Sir Henry Roscoe, English chemist.

1808. — Wilhelm Schimper, German botanist.

1825. — William Spottiswoode, Eng. physicist.
1825. — Bayard Taylor, American traveller.
1716. — Don Antonio de Ulloa, Span. physicist.
1801. — Adolphe T. Brongniart, French botanist.
1806. — M. F. Maury, American hydrographer.
1780. — Parker Cleaveland, Amer. mineralogist.
1706. — Benjamin Franklin, Amer. philosopher.
1761. — J. Hall, Scotch geologist.
1781. — Robert Hare, American chemist.

1825. — E. Frankland, English chemist.
1736. — James Watt, Scotch mechan. engineer.
1775. — A. M. Ampère, French physicist.
1813. — John C. Fremont, Am. eng. and explorer.
1798. — Charles Davies, Amer. mathematician.
1796. — F. J. Hugi, Swiss alpinist.

1627. — Robert Boyle, Irish physicist.
1736. — J. L. Lagrange, French mathematician.
1799. — S. G. Morton, American ethnologist.

1608. — G. A. Borelli, Italian mathematician.
1688. — Emanuel Swedenborg, Swedish philos.
1700. — Daniel Bernouilli, Swiss mathematician.

A BRIEF GUIDE TO THE DECADE.

Jan. 1, 1880, fell on Thursday.
" 1881, " " Saturday.
" 1882, " " Sunday.
" 1883, " " Monday.
" 1884, " " Tuesday.

Jan. 1, 1886, will fall on Friday.
" 1887, " " " Saturday.
" 1888, " " " Sunday.
" 1889, " " " Tuesday.
" 1890, " " " Wednesday.

"The wintry west extends his blast,
And hail and rain does blaw;
Or the stormy north sends driving forth
The blinding sleet and snaw."

BURNS.

FEBRUARY, 1885.

"And once I learned how marvellous winter was,
When past the fence-rails, downy-gray with rime,
I creaked adventurous o'er the spangled crust
That made familiar fields seem far and strange."

LOWELL.

Mean time is used unless otherwise specified.

Second Month. 28 Days.

Day of Year.	Day of Month.	Day of Week.	Moon's Constellation.	PLANETARY PHENOMENA.	Latitude of Boston. Sun Rises. H. M.	Sun Sets. H. M.	Moon Rises. H. M.	Latitude of Washington. Sun Rises. H. M.	Sun Sets. H. M.	Moon Rises. H. M.	Latitude of Charleston, S.C. Sun Rises. H. M.	Sun Sets. H. M.	Moon Rises. H. M.	High Water, New York. (Standard Time.) Morn. H. M.	Eve. H. M.	BIRTHDAYS OF SCIENTIFIC CELEBRITIES.
5.	Septuagesima Sunday.			Day's Length:	10h. 2m.			10h. 16m.			10h. 39m.					
32	1	Su.	♌	☿ in ♉.	7 13	5 15	7 57	7 6	5 22	8 0	6 55	5 34	8 2	9 12	9 49	
33	2	M.	♌	☽ ☌ ☾.	7 12	5 17	9 4	7 5	5 24	9 5	6 54	5 35	9 5	9 56	10 37	1825. — John C. Dalton, American physiologist.
34	3	Tu.	♍	Venus rises 5.59 M.	7 11	5 18	10 8	7 4	5 25	10 7	6 54	5 36	10 4	10 44	11 21	1820. — Elisha K. Kane, Am. Arctic explorer.
35	4	W.	♍	♂ gr. Hel. Lat. S.; ☾ in ♌.	7 10	5 19	11 10	7 3	5 26	11 7	6 53	5 36	11 2	11 28	. . .	1790. — John Bachman, American naturalist.
36	5	Th.	♎	Algol s. 5.56 A.	7 9	5 20	Morn.	7 2	5 27	Morn.	6 52	5 37	11 58	0 11	0 14	1770. — Alexandre Brongniart, French geologist.
37	6	Fr.	♎	☽ 6th. Aldebaran s. 7.20 A.	7 8	5 22	0 10	7 1	5 28	0 6	6 51	5 38	Morn.	1 5	1 6	1825. — Joseph Winlock, American astronomer.
38	7	Sa.	♎	Capella s. 7.55 A.	7 7	5 23	1 7	7 0	5 29	1 1	6 50	5 39	0 52	2 4	2 7	
6.	Sexagesima Sunday.			Day's Length:	10h. 19m.			10h. 31m.			10h. 51m.					
39	8	Su.	♏	□ ♆ ☉.	7 5	5 24	2 2	6 59	5 30	1 56	6 49	5 40	1 44	3 8	3 16	1739. — William Bartram, American traveller.
40	9	M.	♏	☾ in apogee. ♋.	7 4	5 26	2 55	6 58	5 32	2 48	6 49	5 41	2 34	4 9	4 23	1827. — William D. Whitney, Amer. philologist.
41	10	Tu.	♐	Mars sets 5.26 A.	7 3	5 27	3 44	6 57	5 33	3 36	6 48	5 42	3 23	5 3	5 22	1796. — T. de la Beche, English geologist.
42	11	W.	♐	☽ ♂ ☉; ☽ ☿ ♀.	7 1	5 28	4 29	6 56	5 34	4 22	6 47	5 43	4 9	5 49	6 9	1847. —Thomas A. Edison, American electrician.
43	12	Th.	♐	☿ in aphelion.	7 0	5 30	5 11	6 55	5 35	5 5	6 46	5 44	4 53	6 29	6 49	1809. — Charles Darwin, English naturalist.
44	13	Fr.	♑	☽ ♀ ☾; ☽ ☿ ☾.	6 58	5 31	5 50	6 53	5 36	5 45	6 45	5 45	5 35	7 4	7 26	1672. — Étienne Geoffroy, French physicist.
45	14	Sa.	♑	● 14th. ☽ ♂ ☾.	6 57	5 32	Sets.	6 52	5 38	Sets.	6 44	5 45	Sets.	7 34	7 59	1728. — J. Hunter, English physiologist. 1823. — Johanne R. Wagner, German chemist.
7.	Quinquagesima (Shrove Sunday).			Day's Length:	10h. 37m.			10h. 47m.			11h. 3m.					
46	15	Su.	♒	Jupiter rises 5.51 A.	6 56	5 33	6 25	6 51	5 38	6 29	6 43	5 46	6 33	8 4	8 34	
47	16	M.	♒	♄ stationary.	6 55	5 35	7 27	6 50	5 39	7 29	6 42	5 47	7 31	8 38	9 5	1801. — J. T. C. Ratzeburg, German naturalist.
48	17	Tu.	♓	☾ in ♉.	6 53	5 36	8 30	6 48	5 41	8 30	6 41	5 48	8 29	9 10	9 39	1740. — H. B. de Saussure, Swiss physicist.
49	18	W.	♓	☽ ♃ ☉.	6 52	5 37	9 34	6 47	5 42	9 32	6 40	5 49	9 28	9 45	10 18	1564. — Galileo Galilei, Italian astronomer.
50	19	Th.	♓	Rigel s. 7.9 A.	6 50	5 38	10 40	6 46	5 43	10 37	6 39	5 50	10 30	10 24	11 4	1473. — N. Copernicus, German astronomer.
51	20	Fr.	♈	☽ ♆ ☾.	6 49	5 40	11 46	6 44	5 44	11 41	6 38	5 51	11 32	11 9	11 55	1745. — Alessandro Volta, Italian physicist.
52	21	Sa.	♈	☾ 22d. Saturn sets 2.15 M.	6 47	5 41	Morn.	6 43	5 45	Morn.	6 37	5 51	Morn.	. . .	0 2	1822. — Wolcott Gibbs, American chemist.
8.	First Sunday in Lent.			Day's Length:	10h. 56m.			11h. 4m.			11h. 16m.					
53	22	Su.	♉	☽ ♄ ☾.	6 46	5 42	0 52	6 42	5 46	0 46	6 36	5 52	0 35	0 55	1 8	1784. — Major John E. LeConte, Am. zoölogist.
54	23	M.	♉	Uranus rises 7.52 A. ♌.	6 44	5 43	1 56	6 40	5 47	1 49	6 34	5 53	1 36	2 7	2 29	1796. — L. A. J. Quetelet, Belgian astronomer.
55	24	Tu.	♊	Canopus s. 8.1 A.	6 43	5 45	2 56	6 39	5 48	2 48	6 33	5 54	2 35	3 24	3 54	1804. — C. Bremiker, German mathematician.
56	25	W.	♊	☾ in perigee.	6 41	5 46	3 51	6 38	5 49	3 44	6 32	5 55	3 31	4 36	5 8	1801. — James Deane, American geologist.
57	26	Th.	♋	Neptune sets 11.41 A.	6 40	5 47	4 41	6 36	5 50	4 35	6 31	5 56	4 24	5 38	6 12	1728. — A. Baumé, French chemist. 1786. — D. F. J. Arago, French astronomer.
58	27	Fr.	♋	☽ ♃ ☾.	6 38	5 48	5 25	6 35	5 51	5 21	6 30	5 56	5 12	6 33	7 4	1823. — Joseph LeConte, American geologist.
59	28	Sa.	♌	○ 28th. ♂ in perihelion.	6 36	5 50	Rises.	6 33	5 52	Rises.	6 29	5 57	Rises.	7 22	7 53	1743. — R. J. Haüy, French mineralogist.

MOON'S PHASES. (*Standard Time.*)

	Eastern. d. h. m.	Central. d. h. m.	Mountain. d. h. m.	Pacific. d. h. m.
Last Quarter	6 5 37 A.	6 4 37 A.	6 3 37 A.	6 2 37 A.
New Moon	14 9 22 A.	14 8 22 A.	14 7 22 A.	14 6 22 A.
First Quarter	22 5 31 M.	22 4 31 M.	22 3 31 M.	22 2 31 M.
Full Moon	28 11 0 A.	28 10 0 A.	28 9 0 A.	28 8 0 A.

A BRIEF GUIDE TO THE DECADE.

Feb. 1, 1880, fell on Sunday.
" 1881, " " Tuesday.
" 1882, " " Wednesday.
" 1883, " " Thursday.
" 1884, " " Friday.

Feb. 1, 1886, will fall on Monday.
" 1887, " " " Tuesday.
" 1888, " " " Wednesday.
" 1889, " " " Friday.
" 1890, " " " Saturday.

"HAM.—The air bites shrewdly; it is very cold.
HOR.—It is a nipping and an eager air."
SHAKSPEARE.

MARCH, 1885.

"*And it is pleasant, when the noisy streams*
Are just set free, and milder suns melt off
The plashy snow, save only the firm drift
In the deep glen or the close shade of pines." BRYANT.

Mean time is used unless otherwise specified.

Day of Year.	Day of Month.	Day of Week.	Moon's Constellation.	PLANETARY PHENOMENA.	LATITUDE OF BOSTON. Sun Rises. H. M.	Sun Sets. H. M.	Moon Rises. H. M.	LATITUDE OF WASHINGTON. Sun Rises. H. M.	Sun Sets. H. M.	Moon Rises. H. M.	LATITUDE OF CHARLESTON, S.C. Sun Rises. H. M.	Sun Sets. H. M.	Moon Rises. H. M.	HIGH WATER, NEW YORK. (*Standard Time.*) Morn. H. M.	Eve. H. M.
9.	2d Sunday in Lent.			Day's Length:	11h. 16m.			11h. 21m.			11h. 30m.				
60	1	Su.	♌	Canopus s. 7.41 A.	6 35	5 51	6 42	6 32	5 53	6 44	6 28	5 58	6 45	8 7	8 38
61	2	M.	♍	☌ ☊ ☾.	6 33	5 52	7 48	6 30	5 54	7 48	6 26	5 59	7 46	8 53	9 19
62	3	Tu.	♍	☾ in ♌.	6 32	5 53	8 52	6 29	5 56	8 50	6 25	5 59	8 46	9 34	10 0
63	4	W.	♍	☿ gr. Hel. Lat. S.	6 30	5 54	9 55	6 28	5 57	9 51	6 24	6 0	9 45	10 14	10 43
64	5	Th.	♎	Venus rises 5.56 M.	6 28	5 56	10 55	6 26	5 58	10 50	6 23	6 1	10 41	10 55	11 27
65	6	Fr.	♎	☿ in aphelion.	6 27	5 57	11 52	6 25	5 59	11 46	6 21	6 2	11 35	11 38	...
66	7	Sa.	♏	☌ ☿ ☍; ☐ ♄ ☉.	6 25	5 58	Morn.	6 23	6 0	Morn.	6 20	6 3	Morn.	0 14	0 27
10.	3d Sunday in Lent.			Day's Length:	11h. 36m.			11h. 39m.			11h. 45m.				
67	8	Su.	♏	☽ 8th. Sirius s. 7.33 A.	6 23	5 59	0 46	6 22	6 1	0 39	6 19	6 4	0 26	1 9	1 25
68	9	M.	♏	☾ in apogee. ☋.	6 21	6 0	1 37	6 20	6 2	1 29	6 18	6 4	1 16	2 8	2 33
69	10	Tu.	♐	Mars rises 6.13 M.	6 20	6 1	2 24	6 19	6 3	2 16	6 16	6 5	2 3	3 11	3 43
70	11	W.	♐	Castor s. 8.8 A.	6 18	6 3	3 7	6 17	6 4	3 0	6 15	6 6	2 47	4 9	4 41
71	12	Th.	♑	Procyon s. 8.10 A.	6 16	6 4	3 46	6 15	6 5	3 40	6 14	6 6	3 29	4 59	5 20
72	13	Fr.	♑	☌ ☿ ☉ superior.	6 15	6 5	4 22	6 14	6 6	4 17	6 12	6 7	4 9	5 44	6 12
73	14	Sa.	♒	Jupiter sets 5.18 M.	6 13	6 6	4 56	6 12	6 7	4 53	6 11	6 8	4 46	6 22	6 51
11.	4th Sunday in Lent.			Day's Length:	11h. 56m.			11h. 57m.			11h. 59m.				
74	15	Su.	♒	☌ ☿ ☾; ☌ ♂ ☾.	6 11	6 7	5 29	6 11	6 8	5 27	6 10	6 9	5 23	7 2	7 28
75	16	M.	♒	● 16th. ☌ ☿ ☾.	6 9	6 8	Sets.	6 9	6 9	Sets.	6 8	6 9	Sets.	7 38	8 2
76	17	Tu.	♓	☾ in ♉.	6 8	6 10	7 24	6 8	6 10	7 23	6 7	6 10	7 20	8 14	8 36
77	18	W.	♓	Saturn sets 0.41 M.	6 6	6 11	8 30	6 6	6 11	8 27	6 6	6 11	8 22	8 51	9 16
78	19	Th.	♈	Denebola s. 11.52 A.	6 4	6 12	9 38	6 5	6 12	9 34	6 5	6 11	9 25	9 30	9 59
79	20	Fr.	♈	☉ enters ♈, spring begins; ☌ Ψ ☾.	6 3	6 13	10 45	6 3	6 13	10 39	6 3	6 12	10 28	10 14	10 46
80	21	Sa.	♉	☿ ☌ ☉.	6 1	6 14	11 50	6 2	6 14	11 43	6 2	6 13	11 30	11 5	11 39
12.	5th Sunday in Lent.			Day's Length:	12h. 16m.			12h. 15m.			12h. 12m.				
81	22	Su.	♉	☌ ♄ ☾.	5 59	6 15	Morn.	6 0	6 15	Morn.	6 1	6 13	Morn.	...	0 4
82	23	M.	☐	☾ 23d. ☿ in ♌; ☾ in perigee. ☭.	5 57	6 16	0 51	5 58	6 15	0 43	5 59	6 14	0 30	0 43	1 18
83	24	Tu.	☐	Uranus sets 5.56 M.	5 56	6 17	1 47	5 57	6 16	1 40	5 58	6 15	1 27	1 54	2 43
84	25	W.	♋	Pollux s. 7.24 A.	5 54	6 18	2 37	5 55	6 17	2 31	5 57	6 16	2 20	3 11	4 2
85	26	Th.	♋	Regulus s. 9.43 A.	5 52	6 20	3 21	5 53	6 18	3 16	5 55	6 16	3 7	4 22	5 7
86	27	Fr.	♋	☌ ♃ ☾; ☌ ♂ ☿.	5 50	6 21	4 1	5 52	6 19	3 58	5 54	6 17	3 51	5 23	6 1
87	28	Sa.	♌	☿ in perihelion; ☿ gr. Hel. Lat. S.	5 49	6 22	4 37	5 50	6 20	4 35	5 53	6 18	4 31	6 15	6 47
13.	Palm Sunday.			Day's Length:	12h. 36m.			12h. 32m.			12h. 27m.				
88	29	Su.	♌	☌ ☊ ☾.	5 47	6 23	5 12	5 49	6 21	5 12	5 51	6 18	5 11	7 6	7 30
89	30	M.	♍	○ 30th. ☾ in ♌.	5 45	6 24	Rises.	5 47	6 22	Rises.	5 50	6 19	Rises.	7 48	8 12
90	31	Tu.	♍	Neptune sets 9.36 A.	5 43	6 25	7 39	5 46	6 23	7 36	5 49	6 20	7 31	8 29	8 51

Third Month. *31 Days.*

BIRTHDAYS OF SCIENTIFIC CELEBRITIES.

1811. — Hugh E. Strickland, Eng. naturalist.
1847. — Alexander Graham Bell, Am. electrician.
1792. — Isaac Lea, American naturalist.
1512. — G. Mercator, French geographer.
1787. — J. Fraunhofer, German physicist.
1746. — André Michaux, American botanist.
1792. — Sir William Herschel, Eng. astronomer.
1837. — Henry Draper, American astronomer.
1451. — Amerigo Vespucci, Italian explorer.
1628. — M. Malpighi, Italian naturalist.
1811. — U. J. J. LeVerrier, French astronomer.
1835. — Simon Newcomb, Amer. mathematician.
1733. — J. Priestley, English chemist.
1819. — E. Edlund, Swedish physicist.
1776. — Gerald Troost, American geologist.
1801. — George P. Marsh, American philologist.
1750. — Caroline L. Herschel, Eng. astronomer.
1787. — G. S. Ohm, German physicist.
1800. — F. Lieber, Am. publicist and geologist.
1782. — W. Biela, Austrian astronomer.
1834. — C. W. Eliot, Am. chemist and educator.
1768. — J. B. J. Fourier, French physicist.
1799. — F. W. Argelander, German astronomer.
1769. — William Smith, English geologist.
1834. — J. W. Powell, Am. geol. and ethnologist.
1516. — C. Gesner, German naturalist.
1753. — Count Rumford, American physicist.
1773. — Nathaniel Bowditch, Am. mathematic'n.
1749. — P. S. LaPlace, French mathematician.
1793. — Henry R. Schoolcraft, Am. ethnologist.
1596. — Réné D. Descartes, French philosopher.

MOON'S PHASES. (*Standard Time.*)

	EASTERN. *d. h. m.*	CENTRAL. *d. h. m.*	MOUNTAIN. *d. h. m.*	PACIFIC. *d. h. m.*
LAST QUARTER	8 1 54 A.	8 0 54 A.	8 11 54 M.	8 10 54 M.
NEW MOON	16 0 37 A.	16 11 37 M.	16 10 37 M.	16 9 37 M.
FIRST QUARTER	23 0 23 A.	23 11 23 M.	23 10 23 M.	23 9 23 M.
FULL MOON	30 11 40 M.	30 10 40 M.	30 9 40 M.	30 8 40 M.

A BRIEF GUIDE TO THE DECADE.

Mar. 1, 1880, fell on Monday.	Mar. 1, 1886, will fall on Monday.
" 1881, " " Tuesday.	" 1887, " " " Tuesday.
" 1882, " " Wednesday.	" 1888, " " " Thursday.
" 1883, " " Thursday.	" 1889, " " " Friday.
" 1884, " " Saturday.	" 1890, " " " Saturday.

"And every plaine was pclothed faire
With newe greene, and maketh smale floures
To springen here and there in fiel e and mede:
So very good and wholesome be he shoures."
CHAUCER.

APRIL, 1885.

"*Lodged in sunny cleft,*
Where the cold breezes come not, blooms alone
The little wind-flower, whose just opened eye
Is blue as the spring heaven it gazes at,
Startling the loiterer in the naked groves
With unexpected beauty." BRYANT.

Mean time is used unless otherwise specified.

Day of Year.	Day of Month.	Day of Week.	Moon's Constellation.	PLANETARY PHENOMENA.	Latitude of Boston. Sun Rises. H. M.	Sun Sets. H. M.	Moon Rises. H. M.	Latitude of Washington. Sun Rises. H. M.	Sun Sets. H. M.	Moon Rises. H. M.	Latitude of Charleston, S.C. Sun Rises. H. M.	Sun Sets. H. M.	Moon Rises. H. M.	High Water, New York. (*Standard Time.*) Morn. H. M.	Eve. H. M.
91	1	W.	♎	Regulus s. 9.20 A.	5 42	6 26	8 40	5 44	6 24	8 36	5 47	6 20	8 28	9 8	9 29
92	2	Th.	♎	Venus rises 5.33 M.	5 40	6 28	9 39	5 43	6 25	9 33	5 46	6 21	9 23	9 47	10 7
93	3	Fr.	♏	Pollux s. 6.48 A.	5 38	6 29	10 35	5 41	6 26	10 28	5 45	6 22	10 16	10 26	10 45
94	4	Sa.	♏	Denebola s. 10.49 A.	5 36	6 30	11 28	5 39	6 27	11 20	5 44	6 23	11 7	11 7	11 26
14.	Easter Sunday.			Day's Length:	12h. 56m.			12h. 50m.			12h. 41m.				
95	5	Su.	♏	Spica s. 0.24 M. ☋.	5 35	6 31	Morn.	5 38	6 28	Morn.	5 42	6 23	11 56	11 53	. . .
96	6	M.	♐	☾ in apogee.	5 33	6 32	0 17	5 36	6 29	0 9	5 41	6 24	Morn.	0 12	0 47
97	7	Tu.	♐	☽ 7th. ☿ gr. Hel. Lat. N.	5 31	6 33	1 1	5 35	6 30	0 54	5 40	6 25	0 41	1 3	1 49
98	8	W.	♑	☿ gr. elong. E. 19°26′.	5 30	6 34	1 41	5 33	6 31	1 35	5 38	6 25	1 23	1 58	2 53
99	9	Th.	♑	Mars rises 5.10 M.	5 28	6 35	2 19	5 32	6 32	2 14	5 37	6 26	2 4	2 59	3 53
100	10	Fr.	♑	Arcturus s. 0.56 M.	5 26	6 36	2 54	5 30	6 33	2 50	5 36	6 27	2 43	3 55	4 40
101	11	Sa.	♒	Alphacca s. 2.11 M.	5 25	6 38	3 27	5 29	6 34	3 25	5 35	6 28	3 20	4 53	5 24
15.	Low Sunday.			Day's Length:	13h. 16m.			13h. 8m.			12h. 55m.				
102	12	Su.	♒	Jupiter sets 3.19 M.	5 23	6 39	3 59	5 27	6 35	3 58	5 33	6 28	3 56	5 48	6 7
103	13	M.	♓	☌ ☾ in ♉.	5 21	6 40	4 31	5 26	6 36	4 32	5 32	6 29	4 32	6 22	6 49
104	14	Tu.	♓	● 14th. ☌ ☿ ☾.	5 20	6 41	5 5	5 24	6 37	5 8	5 31	6 30	5 11	7 5	7 31
105	15	W.	♈	● 15th. ☌ ☿ ☾.	5 18	6 42	Sets.	5 23	6 38	Sets.	5 30	6 30	Sets.	7 48	8 14
106	16	Th.	♈	☌ ♆ ☾.	5 17	6 43	8 31	5 21	6 38	8 26	5 29	6 31	8 16	8 33	8 58
107	17	Fr.	♉	☿ stationary.	5 15	6 44	9 40	5 20	6 39	9 33	5 27	6 32	9 21	9 20	9 44
108	18	Sa.	♉	☌ ♄ ☾; ☾ in perigee.	5 14	6 45	10 45	5 19	6 40	10 37	5 26	6 32	10 24	10 12	10 34
16.	2d Sunday after Easter.			Day's Length:	13h. 34m.			13h. 24m.			13h. 8m.				
109	19	Su.	□	Saturn sets 10.43 A. ♒.	5 12	6 46	11 43	5 17	6 41	11 35	5 25	6 33	11 22	11 9	11 30
110	20	M.	□	Antares s. 2.28 M.	5 10	6 48	Morn.	5 16	6 42	Morn.	5 24	6 34	Morn.	. . .	0 15
111	21	Tu.	□	☾ 21st. ♃ stationary.	5 9	6 49	0 35	5 14	6 43	0 28	5 23	6 35	0 16	0 32	1 29
112	22	W.	♋	Vega s. 4.31 M.	5 7	6 50	1 22	5 13	6 44	1 17	5 22	6 35	1 6	1 41	2 46
113	23	Th.	♋	☌ ♃ ☾.	5 6	6 51	2 2	5 12	6 45	1 58	5 21	6 36	1 50	2 52	3 55
114	24	Fr	♌	Uranus sets 3.52 M.	5 4	6 52	2 38	5 10	6 46	2 36	5 20	6 37	2 31	3 59	4 52
115	25	Sa.	♌	☌ ♁ ☾.	5 3	6 53	3 12	5 9	6 47	3 12	5 19	6 37	3 9	5 4	5 43
17.	3d Sunday after Easter.			Day's Length:	13h. 53m.			13h. 40m.			13h. 21m.				
116	26	Su.	♍	☾ in ♌.	5 1	6 54	3 45	5 8	6 48	3 46	5 17	6 38	3 47	5 56	6 29
117	27	M.	♍	☌ ☿ ☉ inferior.	5 0	6 55	4 17	5 7	6 49	4 20	5 16	6 39	4 23	6 44	7 10
118	28	Tu.	♎	● 28th. ☌ ☿ ♀.	4 59	6 56	4 48	5 5	6 50	4 53	5 15	6 40	4 59	7 26	7 48
119	29	W.	♎	○ 29th. Neptune sets 7.46 A.	4 57	6 58	Rises.	5 4	6 51	Rises.	5 14	6 41	Rises.	8 8	8 28
120	30	Th.	♎	☿ in ♉.	4 56	6 59	8 24	5 3	6 52	8 18	5 13	6 41	8 6	8 47	9 3

MOON'S PHASES. (*Standard Time.*)

	Eastern. d. h. m.	Central. d. h. m.	Mountain. d. h. m.	Pacific. d. h. m.
Last Quarter	7 9 42 M.	7 8 42 M.	7 7 42 M.	7 6 42 M.
New Moon	15 0 52 M.	14 11 52 A.	14 10 52 A.	14 9 52 A.
First Quarter	21 6 20 A.	21 5 20 A.	21 4 20 A.	21 3 20 A.
Full Moon	29 1 14 M.	29 0 14 M.	28 11 14 A.	28 10 14 A.

A BRIEF GUIDE TO THE DECADE.

April 1, 1880, fell on Thursday.	April 1, 1886, will fall on Thursday.
" 1881, " " Friday.	" 1887, " " " Friday.
" 1882, " " Saturday.	" 1888, " " " Sunday.
" 1883, " " Sunday.	" 1889, " " " Monday.
" 1884, " " Tuesday.	" 1890, " " " Tuesday.

Fourth Month. 30 Days.

BIRTHDAYS OF SCIENTIFIC CELEBRITIES.

1744. — J. B. Lamarck, French zoölogist.
1764. — E. F. Schlotheim, Ger. paleontologist.
1793. — Dionysius Lardner, Irish physicist.
1809. — Benjamin Peirce, Amer. mathematician.
1823. — Sir William Siemens, Eng. physicist.
1768. — Diedrich Karsten, Ger. mineralogist.
1727. — M. Adanson, French naturalist.
1732. — David Rittenhouse, Amer. astronomer.
1814. — C. J. Malmsten, Swedish mathematician.
1804. — O. L. Erdmann, German chemist.
1773. — Thomas Thomson, English chemist.
1743. — Thos. Jefferson, Am. statesman and nat.
1629. — C. Huyghens, Dutch physicist.
1772. — E. G. Saint-Hilaire, French zoölogist.
1800. — James C. Ross, Brit. Arctic navigator.
1794. — K. F. P. Martius, German botanist.
1822. — A. Petermann, German geographer.
1795. — C. G. Ehrenberg, German naturalist.
1824. — Jules Marcou, Swiss and Am. geologist.
1807. — L. Palmieri, Italian physicist.
1724. — Immanuel Kant, German philosopher.
1798. — Sir W. E. Logan, Canadian geologist.
1819. — Otto W. Struve, Russian astronomer.
1774. — C. L. von Buch, German geologist.
1791. — S. F. B. Morse, American electrician.
1782. — William Darlington, American botanist.
1811. — J. W. Bailey, American microscopist.
1834. — Sir J. Lubbock, English naturalist.

"A violet by a mossy stone
Half hidden from the eye!
Fair as a star, when only one
Is shining in the sky."

WORDSWORTH.

MAY, 1885.

"*For half our May's so awfully like mayn't,*
'Twould rile a Shaker or an evrige saint;
Though I own up I like our back'ard springs
Thet kind o' haggle with their greens an' things,
An' when you most give up 'ithout more words
Toss the fields full o' blossoms, leaves, an' birds." LOWELL.

Mean time is used unless otherwise specified.

Day of Year.	Day of Month.	Day of Week.	Moon's Constellation.	PLANETARY PHENOMENA.	Latitude of Boston. Sun Rises. H. M.	Sun Sets. H. M.	Moon Rises. H. M.	Latitude of Washington. Sun Rises. H. M.	Sun Sets. H. M.	Moon Rises. H. M.	Latitude of Charleston, S.C. Sun Rises. H. M.	Sun Sets. H. M.	Moon Rises. H. M.	High Water, New York. (*Standard Time.*) Morn. H. M.	Eve. H. M.
121	1	Fr.	♍	Regulus s. 7.22 A.	4 54	7 0	9 19	5 2	6 53	9 12	5 12	6 42	8 59	9 23	9 37
122	2	Sa.	♍	Venus rises 5.6 M.	4 53	7 1	10 10	5 0	6 54	10 2	5 11	6 43	9 49	10 1	10 10
18.	4th Sunday after Easter.			Day's Length:	14h. 10m.			13h. 56m.			13h. 33m.				
123	3	Su.	♐	Denebola s. 8.55 A. ♁.	4 52	7 2	10 57	4 59	6 55	10 49	5 10	6 43	10 36	10 39	10 44
124	4	M.	♐	☌ ☿ ☉ superior; ☾ in apogee.	4 50	7 3	11 40	4 58	6 56	11 33	5 9	6 44	11 21	11 22	11 23
125	5	Tu.	♐	Spica s. 10.23 A.	4 49	7 4	Morn.	4 57	6 57	Morn.	5 9	6 45	Morn.	. . .	0 8
126	6	W	♌	Mars rises 4.15 M.	4 48	7 5	0 18	4 56	6 57	0 12	5 8	6 45	0 2	0 5	1 3
127	7	Th.	♌	☽ 7th. Arcturus s. 11.6 A	4 47	7 6	0 53	4 55	6 58	0 49	5 7	6 46	0 40	0 56	1 57
128	8	Fr.	♒	Alphacca s. 0.25 M.	4 46	7 8	1 26	4 54	6 59	1 23	5 6	6 47	1 17	1 55	2 51
129	9	Sa.	♒	Jupiter sets 1.33 M.	4 44	7 9	1 57	4 53	7 0	1 56	5 5	6 47	1 52	2 54	3 47
19.	Rogation Sunday.			Day's Length:	14h. 27m.			14h. 9m.			13h. 44m.				
130	10	Su.	♒	☿ in aphelion; ☾ in ♉.	4 43	7 10	2 28	4 52	7 1	2 28	5 4	6 48	2 27	3 51	4 40
131	11	M.	♓	☿ stationary; ☌ ♆ ♀.	4 42	7 11	3 1	4 51	7 2	3 3	5 3	6 49	3 5	4 47	5 26
132	12	Tu.	♓	☌ ♂ ☾; ☌ ☿ ☾.	4 41	7 12	3 35	4 50	7 3	3 39	5 3	6 50	3 43	5 41	6 19
133	13	W.	♈	☌ ☿ ♂; ☌ ♆ ☉.	4 40	7 13	4 12	4 49	7 4	4 18	5 2	6 51	4 26	6 35	7 8
134	14	Th.	♈	● 14th. ☌ ♆ ☾; ☌ ♀ ☾.	4 39	7 14	Sets.	4 48	7 5	Sets.	5 1	6 51	Sets.	7 28	7 56
135	15	Fr.	♉	Saturn sets 9.13 A.	4 38	7 15	8 30	4 47	7 6	8 23	5 1	6 52	8 10	8 19	8 44
136	16	Sa.	♉	☌ ♄ ☾; ☾ in perigee. ♋.	4 37	7 16	9 33	4 46	7 7	9 25	5 0	6 53	9 12	9 14	9 34
20.	Sunday after Ascension.			Day's Length:	14h. 41m.			14h. 23m.			13h. 54m.				
137	17	Su.	♊	☐ ♃ ☉.	4 36	7 17	10 30	4 45	7 8	10 23	4 59	6 53	10 10	10 10	10 24
138	18	M.	♊	Antares s. 0.38 M.	4 35	7 18	11 20	4 44	7 8	11 14	4 59	6 54	11 3	11 10	11 19
139	19	Tu.	♋	Vega s. 2 44 M.	4 34	7 19	Morn.	4 44	7 9	11 59	4 58	6 55	11 50	. . .	0 15
140	20	W.	♋	☾ 20th. ☌ ♃ ☾.	4 33	7 20	0 3	4 43	7 10	Morn.	4 57	6 56	Morn.	0 17	1 24
141	21	Th.	♌	● 21st. Uranus sets 2.5 M.	4 32	7 21	0 41	4 42	7 11	0 38	4 57	6 56	0 32	1 19	2 30
142	22	Fr	♌	☌ ♁ ☾.	4 32	7 22	1 16	4 41	7 12	1 15	4 56	6 57	1 12	2 29	3 33
143	23	Sa.	♍	☿ in ☊.	4 31	7 23	1 49	4 41	7 13	1 50	4 56	6 58	1 49	3 36	4 30
21.	Pentecost (Whit Sunday).			Day's Length:	14h. 54m.			14h. 33m.			14h. 3m.				
144	24	Su.	♍	☾ in ☊.	4 30	7 24	2 20	4 40	7 13	2 23	4 55	6 58	2 25	4 37	5 24
145	25	M.	♍	☿ gr. elong. W. 24°59′.	4 29	7 25	2 51	4 39	7 14	2 55	4 55	6 59	3 0	5 31	6 11
146	26	Tu.	♎	Altair s. 3.29 M.	4 28	7 26	3 23	4 39	7 15	3 29	4 55	6 59	3 37	6 22	6 54
147	27	W.	♎	Spica s. 8 56 A.	4 28	7 26	3 59	4 38	7 16	4 6	4 54	7 0	4 17	7 8	7 34
148	28	Th.	♏	○ 28th. Neptune rises 4.5 M.	4 27	7 27	Rises.	4 38	7 17	Rises.	4 54	7 1	Rises.	7 51	8 9
149	29	Fr.	♏	☌ ♃ *Regulus.*	4 27	7 28	8 5	4 37	7 17	7 58	4 53	7 1	7 44	8 30	8 43
150	30	Sa.	♐	☌ ☿ ♂. ♑.	4 26	7 29	8 53	4 37	7 18	8 45	4 53	7 2	8 32	9 7	9 12
22.	Trinity Sunday.			Day's Length:	15h. 4m.			14h. 43m.			14h. 9m.				
151	31	Su.	♐	☿ gr. Hel. Lat. S.; ☾ in apogee.	4 26	7 30	9 38	4 36	7 19	9 31	4 53	7 2	9 18	9 42	9 40

Fifth Month. *31 Days.*

BIRTHDAYS OF SCIENTIFIC CELEBRITIES.

1797. — H. K. W. Berghaus, Ger. geographer.
1809. — L. G. de Koninck, Belg. paleontologist.
1825. — Thomas H. Huxley, English naturalist.
1811. — J. W. Draper, American physicist.
1832. — Isaac I. Hayes, American explorer.
1833. — F. P. W. Richthofen, German geologist.
1785. — James P. Espy. Amer. meteorologist.
1773. — William Phillips, English geologist.
1788. — A. J. Fresnel, French physicist.
1722. — Peter Camper, Dutch physiologist.
1803. — J. J. Liebig, German chemist.
1825. — Joseph Leidy, American biologist.
1686. — G. D. Fahrenheit, German physicist.
1780. — J. J. Audubon, American ornithologist.
1799. — Ebenezer Emmons, American geologist.
1741. — Faujas de Saint-Fond, French geologist.
1778. — Andrew Ure, Scotch chemist.
1815. — Gen. J. G. Barnard, American engineer.
1819. — Sir Lyon Playfair, English chemist.
1790. — J. Dumont d'Urville, French navigator.
1707. — Carl von Linné, Swedish naturalist.
1793. — Edward Hitchcock, Amer. geologist.
1794. — William Whewell, English physicist.
1803. — Prince C. L. Bonaparte, Fr. ornithol.
1820. — W. Chauvenet, Amer. mathematician.
1807. — Louis Agassiz, Swiss and Am. naturalist.
1716. — L. Daubenton, French mineralogist.
1797. — K. F. Naumann, Ger. mineralogist.
1817. — H. A. Hagen, Ger. and Am. entomol.

MOON'S PHASES. (*Standard Time.*)

	EASTERN. d. h. m.	CENTRAL. d. h. m.	MOUNTAIN. d. h. m.	PACIFIC. d. h. m.
Last Quarter	7 3 43 M.	7 2 43 M.	7 1 43 M.	7 0 43 M.
New Moon	14 10 17 M.	14 9 17 M.	14 8 17 M.	14 7 17 M.
First Quarter	21 0 45 M.	20 11 45 A.	20 10 45 A.	20 9 45 A.
Full Moon	28 3 31 A.	28 2 31 A.	28 1 31 A.	28 0 31 A.

A BRIEF GUIDE TO THE DECADE.

May 1, 1880, fell on Saturday.
" 1881, " " Sunday.
" 1882, " " Monday.
" 1883, " " Tuesday.
" 1884, " " Thursday.

May 1, 1886, will fall on Saturday.
" 1887, " " " Sunday.
" 1888, " " " Tuesday.
" 1889, " " " Wednesday.
" 1890, " " " Thursday.

"'Tis heaven alone is given away,
'Tis only God may be had for the asking,
No price is set on the lavish summer,
June may be had by the poorest comer."
LOWELL.

JUNE, 1885.

"*The oriole should build and tell*
His love-tale close beside my cell;
The idle butterfly
Should rest him there, and there be heard
The housewife bee and humming-bird." BRYANT.

Mean time is used unless otherwise specified.

Sixth Month. 30 Days.

Day of Year.	Day of Month.	Day of Week.	Moon's Constellation.	PLANETARY PHENOMENA.	LATITUDE OF BOSTON. Sun Rises.	Sun Sets.	Moon Rises.	LATITUDE OF WASHINGTON. Sun Rises.	Sun Sets.	Moon Rises.	LATITUDE OF CHARLESTON, S.C. Sun Rises.	Sun Sets.	Moon Rises.	HIGH WATER, NEW YORK. (*Standard Time.*) Morn.	Eve.	BIRTHDAYS OF SCIENTIFIC CELEBRITIES.
					H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	
152	1	M.	♍	Spica s. 8.36 A.	4 25	7 30	10 18	4 36	7 19	10 12	4 52	7 3	10 1	10 16	10 9	
153	2	Tu.	♍	Venus sets 7.54 A.	4 25	7 31	10 53	4 36	7 20	10 48	4 52	7 3	10 39	10 52	10 43	
154	3	W.	♍	Arcturus s. 9.20 A.	4 24	7 32	11 26	4 35	7 21	11 22	4 52	7 4	11 15	11 33	11 24	1726. — J. Hutton, Scotch geologist.
155	4	Th	♎	Alphacca s. 10.35 A.	4 24	7 32	11 58	4 35	7 21	11 56	4 52	7 5	11 51	. . .	0 14	1787. — L. C. Prévost, French geologist.
156	5	Fr.	♎	☽ 5th. ♁ stationary; ☌ ♆ ☿.	4 24	7 33	Morn.	4 35	7 22	Morn.	4 52	7 5	Morn.	0 8	1 4	1819. — J. C. Adams, English astronomer.
157	6	Sa.	♎	☾ in ♈.	4 23	7 34	0 29	4 34	7 23	0 28	4 51	7 5	0 26	0 58	2 2	1436. — Regiomontanus, German astronomer.
23.	1st Sunday after Trinity.			Day's Length:	15h. 11m.			14h. 49m.			14h. 15m.					
158	7	Su.	♓	☌ ♄ ☿.	4 23	7 34	1 0	4 34	7 23	1 1	4 51	7 6	1 1	1 55	3 1	
159	8	M.	♓	Mars rises 3.11 M.	4 23	7 35	1 31	4 34	7 24	1 34	4 51	7 6	1 37	2 57	4 0	1821. — Sir Samuel W. Baker, Eng. traveller.
160	9	Tu.	♈	Antares s. 11.8 A.	4 23	7 36	2 5	4 34	7 24	2 10	4 51	7 7	2 16	4 2	4 59	
161	10	W.	♈	☌ ♆ ♂; ☌ ♆ ☾; ☌ ♂ ☾.	4 22	7 36	2 44	4 34	7 25	2 50	4 51	7 7	3 0	5 7	5 54	1706. — J. Dollond, English optician.
162	11	Th.	♉	☌ ☿ ☾.	4 22	7 37	3 29	4 34	7 25	3 37	4 51	7 8	3 49	6 10	6 48	1790. — J. E. Teschemacher, Am. mineralogist.
163	12	Fr.	♉	● 12th. ☌ ♄ ☾.	4 22	7 37	Sets.	4 34	7 26	Sets.	4 51	7 8	Sets.	7 10	7 40	
164	13	Sa.	□	☌ ☿ ☾; ☾ in perigee. ♎.	4 22	7 38	8 17	4 34	7 26	8 10	4 51	7 8	7 56	8 9	8 32	1773. — Thomas Young, English physicist.
24.	2d Sunday after Trinity.			Day's Length:	15h. 16m.			14h. 53m.			14h. 18m.					
165	14	Su.	□	Jupiter sets 11.17 A.	4 22	7 38	9 11	4 34	7 27	9 5	4 51	7 9	8 53	9 7	9 22	
166	15	M.	♋	Vega s. 0.58 M.	4 22	7 38	10 0	4 34	7 27	9 55	4 51	7 9	9 45	10 3	10 12	
167	16	Tu.	♋	Altair s. 2.6 M.	4 22	7 39	10 42	4 34	7 27	10 38	4 51	7 10	10 31	11 0	11 4	1800. — Lord Rosse, Irish astronomer.
168	17	W.	♌	☌ ♃ ☾.	4 22	7 39	11 19	4 34	7 27	11 17	4 51	7 10	11 13	11 59	11 57	1821. — E. G. Squier, American archeologist.
169	18	Th.	♌	☌ ♄ ☉.	4 23	7 39	11 52	4 34	7 28	11 52	4 52	7 10	11 51	. . .	1 0	1791. — Denison Olmstead, American physicist.
170	19	Fr.	♍	☾ 19th. ☌ ♁ ☾; ☿ in ♌; □ ♁ ☉.	4 23	7 40	Morn.	4 34	7 28	Morn.	4 52	7 11	Morn.	0 56	1 59	1781. — George Stephenson, English engineer.
171	20	Sa.	♍	☾ in ♌.	4 23	7 40	0 23	4 34	7 28	0 25	4 52	7 11	0 26	1 58	3 2	1811. — Carlo Matteucci, Italian physicist.
25.	3d Sunday after Trinity.			Day's Length:	15h. 17m.			14h. 55m.			14h. 19m.					
172	21	Su.	♍	☉ enters ♋; summer begins.	4 23	7 40	0 54	4 34	7 29	0 58	4 52	7 11	1 2	3 1	4 3	1646. — G. W. Leibnitz, German mathematician.
173	22	M.	♎	Saturn rises 4.31 M.	4 23	7 40	1 26	4 35	7 29	1 31	4 52	7 11	1 39	4 4	5 0	1781. — S. D. Poisson, French physicist.
174	23	Tu.	♎	☌ ☿ ♄.	4 24	7 40	2 1	4 35	7 29	2 8	4 53	7 11	2 17	5 6	5 51	1815. — J. J. Oppel, German physicist.
175	24	W.	♏	☿ in perihelion.	4 24	7 40	2 38	4 35	7 29	2 46	4 53	7 11	2 58	6 2	6 35	1777. — John Ross, British Arctic navigator.
176	25	Th.	♏	Uranus sets 11.43 A.	4 24	7 40	3 18	4 36	7 29	3 27	4 53	7 11	3 40	6 52	7 17	1814. — Paul Daubrée, French geologist.
177	26	Fr.	♏	♀ in perihelion. ♎.	4 25	7 40	4 1	4 36	7 29	4 10	4 54	7 12	4 24	7 36	7 53	
178	27	Sa.	♐	○ 27th. ☌ ☿ ☉ superior.	4 25	7 40	Rises.	4 37	7 29	Rises.	4 54	7 12	Rises.	8 14	8 23	1806. — A. de Morgan, English mathematician.
26.	4th Sunday after Trinity.			Day's Length:	15h. 15m.			14h. 52m.			14h. 18m.					
179	28	Su.	♐	☾ in apogee.	4 25	7 40	8 18	4 37	7 29	8 11	4 54	7 12	8 0	8 48	8 50	1812. — C. G. Page, American electrician.
180	29	M.	♑	Fomalhaut s. 4.21 M.	4 26	7 40	8 55	4 37	7 29	8 49	4 55	7 12	8 39	9 19	9 14	1804. — C. U. Shepard, American mineralogist.
181	30	Tu.	♑	Neptune rises 1.59 M.	4 26	7 40	9 29	4 38	7 29	9 25	4 55	7 12	9 17	9 49	9 41	1818. — Angelo Secchi, Italian astronomer.

MOON'S PHASES. (*Standard Time.*)

	EASTERN. d. h. m.	CENTRAL. d. h. m.	MOUNTAIN. d. h. m.	PACIFIC. d. h. m.
LAST QUARTER	5 7 5 A.	5 6 5 A.	5 5 5 A.	5 4 5 A.
NEW MOON	12 5 42 A.	12 4 42 A.	12 3 42 A.	12 2 42 A.
FIRST QUARTER	19 8 48 M.	19 7 48 M.	19 6 48 M.	19 5 48 M.
FULL MOON	27 6 18 M.	27 5 18 M.	27 4 18 M.	27 3 18 M.

A BRIEF GUIDE TO THE DECADE.

June 1, 1880, fell on Tuesday.
" 1881, " " Wednesday.
" 1882, " " Thursday.
" 1883, " " Friday.
" 1884, " " Sunday.

June 1, 1886, will fall on Tuesday.
" 1887, " " " Wednesday.
" 1888, " " " Friday.
" 1889, " " " Saturday.
" 1890, " " " Sunday.

"There, through the long, long summer hours,
The golden light should lie,
And thick young herbs and groups of flowers
Stand in their beauty by."

BRYANT.

JULY, 1885.

"*The crows flapped over by twos and threes,*
In the pool drowsed the cattle up to their knees,
The little birds sang as if it were
The one day of summer in all the year,
And the very leaves seemed to sing on the trees." LOWELL.

Mean time is used unless otherwise specified.

Day of Year.	Day of Month.	Day of Week.	Moon's Constellation.	PLANETARY PHENOMENA.	Latitude of Boston. Sun Rises. H. M.	Sun Sets. H. M.	Moon Rises. H. M.	Latitude of Washington. Sun Rises. H. M.	Sun Sets. H. M.	Moon Rises. H. M.	Latitude of Charleston, S.C. Sun Rises. H. M.	Sun Sets. H. M.	Moon Rises. H. M.	High Water, New York. (*Standard Time.*) Morn. H. M.	Eve. H. M.
182	1	W.	♑	♂ in ♌.	4 27	7 40	10 1	4 38	7 29	9 58	4 55	7 12	9 52	10 22	10 14
183	2	Th.	♒	Venus sets 8.30 A.	4 27	7 40	10 31	4 39	7 29	10 30	4 56	7 12	10 26	10 56	10 49
184	3	Fr.	♓	☉ in apogee; ☾ in ♉.	4 28	7 40	11 1	4 39	7 29	11 1	4 56	7 12	11 0	11 35	11 28
185	4	Sa.	♈	☿ gr. Hel. Lat. N.	4 29	7 39	11 32	4 40	7 28	11 34	4 57	7 11	11 36	. . .	0 23
27.	5th Sunday after Trinity.			Day's Length:	15h. 10m.			14h. 48m.			14h. 14m.				
186	5	Su.	♈	☽ 5th. Alphacca s. 8.33 A.	4 29	7 39	Morn.	4 40	7 28	Morn.	4 57	7 11	Morn.	0 15	1 18
187	6	M.	♈	Antares s. 9.21 A.	4 29	7 39	0 4	4 41	7 28	0 8	4 58	7 11	0 12	1 10	2 19
188	7	Tu.	♉	Mars rises 2.27 M.	4 30	7 38	0 39	4 41	7 28	0 45	4 58	7 11	0 53	2 15	3 25
189	8	W.	♉	☌ ♆ ☾.	4 31	7 38	1 19	4 42	7 27	1 26	4 59	7 11	1 37	3 28	4 33
190	9	Th.	♊	☌ ♂ ☾.	4 32	7 38	2 5	4 43	7 27	2 13	4 59	7 10	2 26	4 43	5 34
191	10	Fr.	♊	☌ ♄ ☾. ☽.	4 33	7 37	2 59	4 43	7 26	3 8	4 59	7 10	3 22	5 54	6 32
192	11	Sa.	♋	☾ in perigee.	4 33	7 37	4 2	4 44	7 26	4 11	5 0	7 10	4 25	6 58	7 27
28.	6th Sunday after Trinity.			Day's Length:	15h. 2m.			14h. 41m.			14h. 8m.				
193	12	Su.	♋	● 11th, 12th. Jupiter sets 9.37 A.	4 34	7 36	Sets.	4 45	7 26	Sets.	5 1	7 9	Sets.	7 57	8 18
194	13	M.	♌	☌ ☿ ☾; ☌ ♀ ☾.	4 35	7 36	8 35	4 45	7 25	8 31	5 1	7 9	8 22	8 54	9 7
195	14	Tu.	♌	☌ ♃ ☾.	4 36	7 35	9 16	4 46	7 24	9 13	5 2	7 9	9 8	9 47	9 55
196	15	W.	♌	Vega s. 10.56 A.	4 37	7 34	9 52	4 47	7 24	9 51	5 3	7 8	9 49	10 39	10 42
197	16	Th.	♌	☌ ☉ ☾.	4 38	7 34	10 25	4 48	7 23	10 26	5 3	7 8	10 26	11 32	11 34
198	17	Fr.	♍	☌ ☿ ♀; ☾ in ♌.	4 38	7 33	10 57	4 48	7 23	11 0	5 4	7 8	11 3	. . .	0 23
199	18	Sa.	♍	☿ gr. Hel. Lat. N.	4 39	7 32	11 30	4 49	7 22	11 35	5 5	7 7	11 40	0 26	1 22
29.	7th Sunday after Trinity.			Day's Length:	14h. 52m.			14h. 32m.			14h. 2m.				
200	19	Su.	♎	☾ 18th. Saturn rises 3.0 M.	4 40	7 32	Morn.	4 50	7 22	Morn.	5 5	7 7	Morn.	1 23	2 24
201	20	M.	♎	☌ ♄ η Geminorum.	4 41	7 31	0 4	4 51	7 21	0 10	5 6	7 6	0 18	2 24	3 29
202	21	Tu.	♏	Altair s. 11.45 A.	4 42	7 30	0 40	4 52	7 20	0 48	5 7	7 5	0 58	3 33	4 30
203	22	W.	♏	Fomalhaut s. 2.50 M.	4 43	7 29	1 19	4 52	7 19	1 27	5 7	7 5	1 40	4 42	5 24
204	23	Th.	♏	Markab. s. 2.54 M. ♐.	4 44	7 28	2 1	4 53	7 19	2 10	5 8	7 4	2 24	5 41	6 13
205	24	Fr.	♐	Uranus sets 9.51 A.	4 45	7 27	2 46	4 54	7 18	2 55	5 8	7 4	3 9	6 33	6 48
206	25	Sa.	♐	☾ in apogee.	4 46	7 26	3 34	4 55	7 17	3 43	5 9	7 3	3 57	7 16	7 29
30.	8th Sunday after Trinity.			Day's Length:	14h. 38m.			14h. 20m.			13h. 52m.				
207	26	Su.	♐	○ 26th. ☌ ☿ *Regulus.*	4 47	7 25	4 27	4 56	7 16	4 35	5 10	7 2	4 48	7 51	7 59
208	27	M.	♑	☿ in ♉.	4 48	7 24	Rises.	4 57	7 15	Rises.	5 10	7 2	Rises.	8 24	8 26
209	28	Tu.	♑	Algenib s. 3.43 M.	4 49	7 23	8 5	4 57	7 14	8 2	5 11	7 1	7 55	8 53	8 49
210	29	W.	♒	Polaris s. 4.48 M.	4 50	7 22	8 35	4 58	7 13	8 33	5 12	7 0	8 29	9 21	9 18
211	30	Th.	♒	Neptune rises 11.59 A.	4 51	7 21	9 5	4 59	7 12	9 5	5 12	6 59	9 3	9 50	9 47
212	31	Fr.	♓	☾ in ♉.	4 52	7 20	9 35	5 0	7 12	9 37	5 13	6 58	9 38	10 22	10 19

Seventh Month. 31 Days.

BIRTHDAYS OF SCIENTIFIC CELEBRITIES.

1750. — Franz Huber, Swiss entomologist.
1803. — Edouard Constant Biot, Fr. astronomer.
1840. — Francis A. Walker, American publicist.

1817. — Karl Vogt, Swiss naturalist.
1820. — W. J. M. Rankine, Scotch engineer.
1766. — Alexander Wilson, Amer. ornithologist.
1831. — Daniel C. Gilman, American educator.
1809. — Robert W. Gibbes, American naturalist.
1809. — F. A. Quenstedt, German geologist.
1732. — J. J. de LaLande, French astronomer.
1795. — Samuel L. Dana, American chemist.
1811. — W. R. Grove, English physicist.

1817. — Henry D. Thoreau, Amer. naturalist.
1800. — J. B. Dumas, French chemist.
1801. — Johannes Müller, German physiologist.

1746. — G. Piazzi, Italian astronomer.
1768. — Thaddeus M. Harris, Amer. naturalist.
1811. — Karl L. Littrow, Austrian astronomer.

1806. — A. D. Bache, American geodesist.
1846. — Edward C. Pickering, Am. astronomer.
1810. — H. V. Regnault, French physicist.
1784. — F. W. Bessel, German astronomer.
1752. — M. A. Pictet, Swiss physicist.
1737. — A. Dalrymple, English hydrographer.
1778. — Heinrich A. Vogel, German chemist.

1787. — T. F. L. Nees v. Esenbeck, Ger. botanist.
1667. — Johann Bernouilli, Swiss mathematician.
1787. — Thomas Say, American zoölogist.
1801. — G. B. Airy, English astronomer.
1800. — Friedrich Wöhler, German chemist.
1829. — J. A. Meigs, American ethnologist.

MOON'S PHASES. (*Standard Time.*)

	Eastern. d. h. m.	Central. d. h. m.	Mountain. d. h. m.	Pacific. d. h. m.
Last Quarter	5 7 26 M.	5 6 26 M.	5 5 26 M.	5 4 26 M.
New Moon	12 0 16 M.	11 11 16 A.	11 10 16 A.	11 9 16 A.
First Quarter	18 7 20 A.	18 6 20 A.	18 5 20 A.	18 4 20 A.
Full Moon	26 9 23 A.	26 8 23 A.	26 7 23 A.	26 6 23 A.

A BRIEF GUIDE TO THE DECADE.

July 4, 1880, fell on Sunday.
" 1881, " " Monday.
" 1882, " " Tuesday.
" 1883, " " Wednesday.
" 1884, " " Friday.

July 4, 1886, will fall on Sunday.
" 1887, " " " Monday.
" 1888, " " " Wednesday.
" 1889, " " " Thursday.
" 1890, " " " Friday.

"The tender speckled moth here dancing seen,
The vaulting grasshopper of glossy green,
And all-prolific summer's sporting train,
Their little lives by various pow'rs sustain."

BLOOMFIELD.

AUGUST, 1885.

"The sky is a drinking-cup that was o'erturned of old,
And it poureth forth in the eyes of men its wine of airy gold.
We drink of the wine all day, till the last drop is drained up,
And are lighted off to bed by the jewels in the cup."

R. H. STODDARD.

Mean time is used unless otherwise specified.

Day of Year.	Day of Month.	Day of Week.	Moon's Constellation.	PLANETARY PHENOMENA.	LATITUDE OF BOSTON. Sun Rises.	Sun Sets.	Moon Rises.	LATITUDE OF WASHINGTON. Sun Rises.	Sun Sets.	Moon Rises.	LATITUDE OF CHARLESTON, S.C. Sun Rises.	Sun Sets.	Moon Rises.	HIGH WATER, NEW YORK. (*Standard Time.*) Morn.	Eve.
					H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.
213	1	Sa.	♓	Antares s. 7.40 A.	4 53	7 19	10 6	5 1	7 11	10 9	5 14	6 57	10 13	11 2	10 59
31.	9th Sunday after Trinity.			Day's Length:	14h. 24m.			14h. 7m.			13h. 43m.				
214	2	Su.	♓	Venus sets 8.19 A.	4 54	7 18	10 39	5 2	7 9	10 44	5 14	6 57	10 51	11 48	11 45
215	3	M.	♈	☽ 3d. Vega s. 9.42 A.	4 55	7 16	11 16	5 3	7 8	11 23	5 15	6 56	11 32	. . .	0 43
216	4	Tu.	♈	☌ ♆ ☾; ☌ ☿ ♆.	4 56	7 15	11 58	5 4	7 7	Morn.	5 16	6 55	Morn.	0 41	1 46
217	5	W.	♉	☌ ♄ μ Geminorum; ☌ ♆ ♀.	4 57	7 14	Morn.	5 5	7 6	0 6	5 16	6 54	0 18	1 49	2 57
218	6	Th.	♉	☿ gr. elong. E. 27°23′; ☌ ♂ ♄.	4 58	7 13	0 47	5 5	7 5	0 56	5 17	6 53	1 9	3 10	4 10
219	7	Fr.	☐	☿ in aphelion; ☌ ♄ ☾; ☌ ♂ ☾. ♎.	4 59	7 11	1 43	5 6	7 4	1 52	5 18	6 52	2 6	4 32	5 18
220	8	Sa.	☐	☌ ☿ ♀.	5 0	7 10	2 46	5 7	7 3	2 55	5 19	6 52	3 8	5 44	6 17
32.	10th Sunday after Trinity.			Day's Length:	14h. 8m.			13h. 54m.			13h. 32m.				
221	9	Su.	♋	☾ in perigee.	5 1	7 9	3 55	5 8	7 2	4 3	5 19	6 51	4 15	6 47	7 10
222	10	M.	♋	● 10th. Mars rises 1.48 M.	5 2	7 7	Sets.	5 9	7 0	Sets.	5 20	6 50	Sets.	7 43	8 1
223	11	Tu.	♌	☌ ♃ ☾.	5 3	7 6	7 46	5 10	6 59	7 44	5 21	6 49	7 40	8 35	8 48
224	12	W.	♌	☌ ☿ ☾; ☌ ♀ ☾.	5 4	7 4	8 22	5 11	6 58	8 22	5 21	6 48	8 21	9 24	9 34
225	13	Th.	♍	☌ ♋ ☾; ☾ in ☌.	5 5	7 3	8 56	5 12	6 56	8 58	5 22	6 47	9 0	10 9	10 22
226	14	Fr.	♍	Altair s. 10.10 A.	5 6	7 2	9 30	5 13	6 55	9 34	5 23	6 45	9 38	10 56	11 7
227	15	Sa.	♎	Fomalhaut s. 1.16 M.	5 7	7 0	10 4	5 14	6 54	10 10	5 24	6 44	10 17	11 47	11 54
33.	11th Sunday after Trinity.			Day's Length:	13h. 51m.			13h. 38m.			13h. 19m.				
228	16	Su.	♎	Jupiter sets 7.37 A.	5 8	6 59	10 39	5 15	6 53	10 46	5 24	6 43	10 56	. . .	0 40
229	17	M.	♎	☾ 17th. Markab s. 1.16 M.	5 10	6 57	11 17	5 15	6 51	11 25	5 25	6 42	11 37	0 48	1 41
230	18	Tu.	♏	□ ♆ ☉.	5 11	6 56	11 58	5 16	6 50	Morn.	5 26	6 41	Morn.	1 50	2 46
231	19	W.	♏	☌ ♀ β Virginis.	5 12	6 54	Morn.	5 17	6 49	0 7	5 26	6 40	0 20	3 2	3 50
232	20	Th.	♐	☿ stationary. ♑.	5 13	6 53	0 42	5 18	6 47	0 51	5 27	6 39	1 5	4 14	4 49
233	21	Fr.	♐	☾ in apogee.	5 14	6 51	1 30	5 19	6 46	1 39	5 27	6 38	1 53	5 16	5 39
234	22	Sa.	♐	Saturn rises 1.2 M.	5 15	6 50	2 21	5 20	6 44	2 30	5 28	6 36	2 42	6 4	6 22
34.	12th Sunday after Trinity.			Day's Length:	13h. 32m.			13h. 22m.			13h. 6m.				
235	23	Su.	♑	Algenib s. 2.0 M.	5 16	6 48	3 15	5 21	6 43	3 23	5 29	6 35	3 35	6 44	6 58
236	24	M.	♑	☌ ♁ ♀.	5 17	6 46	4 11	5 22	6 42	4 18	5 30	6 34	4 27	7 19	7 27
237	25	Tu.	♒	○ 25th. Uranus sets 7.47 A.	5 18	6 45	Rises.	5 23	6 40	Rises.	5 30	6 33	Rises.	7 50	7 54
238	26	W.	♒	Polaris s. 2.58 M.	5 19	6 43	7 9	5 24	6 39	7 8	5 31	6 32	7 6	8 21	8 27
239	27	Th.	♓	☌ ☿ ♆; ☿ gr. Hel. Lat. S.; ☾ in ♈.	5 20	6 41	7 39	5 25	6 38	7 40	5 31	6 30	7 40	8 51	8 54
240	28	Fr.	♓	♆ stationary.	5 21	6 40	8 10	5 26	6 36	8 13	5 32	6 29	8 15	9 19	9 25
241	29	Sa.	♓	Achernar s. 3.3 M.	5 22	6 38	8 43	5 26	6 34	8 47	5 33	6 28	8 53	9 54	10 0
35.	13th Sunday after Trinity.			Day's Length:	13h. 14m.			13h. 6m.			12h. 54m.				
242	30	Su.	♈	Neptune rises 9.58 A.	5 23	6 37	9 18	5 27	6 33	9 24	5 33	6 27	9 33	10 35	10 40
243	31	M.	♈	☌ ♆ ☾.	5 24	6 35	9 57	5 28	6 31	10 4	5 34	6 25	10 15	11 23	11 29

Eighth Month. *31 Days.*

BIRTHDAYS OF SCIENTIFIC CELEBRITIES.

1778. — John C. Warren, American anatomist.
1779. — Lorenz Oken, German naturalist.
1818. — Maria Mitchell, American astronomer.
1773. — Jeremiah Day, American mathematician.
1802. — N. H Abel, Norwegian mathematician.
1766. — William H. Wollaston, Eng. physicist.
1727 — James Bowdoin, American physicist.
1799. — Benjamin Silliman, American chemist.
1822. — J. A. W. Moleschott, Dutch physiologist.
1779. — Joachim Barrande, Bohemian paleontol.
1814. — Jeffries Wyman, American physiologist.
1814. — A. J. Ångström, Swedish astronomer.
1819. — George G. Stokes, Irish physicist.
1777. — H. C. Oersted, Danish physicist.
1743. — A. L. Lavoisier, French chemist.
1821. — A. Cayley, English mathematician.
1699. — B. J. Jussieu, French botanist.
1646. — J. Flamsteed, English astronomer.
1793. — Elisha Mitchell, American naturalist.
1794. — Bernhard Studer, Swiss geologist.
1820. — John Tyndall, English physicist.
1647. — D. Papin, French physicist.
1796. — Baden Powell, English mathematician.
1769. — George Cuvier, French naturalist.
1784. — Joseph E. Worcester, American geographer and philologist.
1749. — Wilhelm von Goethe, Ger. poet and nat.
1810. — O. M. Mitchel, Amer. astronomer.
1779. — J. J. Berzelius, Swedish chemist.
1809. — Oliver Wendell Holmes, Am. physiol.
Oswald Heers, Swiss naturalist.
1821. — H. L. F. Helmholtz, German physicist.

MOON'S PHASES. (*Standard Time.*)

	EASTERN. *d.* *h.* *m.*	CENTRAL. *d.* *h.* *m.*	MOUNTAIN. *d.* *h.* *m.*	PACIFIC. *d.* *h.* *m.*
LAST QUARTER	3 4 56 A.	3 3 56 A.	3 2 56 A.	3 1 56 A.
NEW MOON	10 7 14 M.	10 6 14 M.	10 5 14 M.	10 4 14 M.
FIRST QUARTER	17 8 47 M.	17 7 47 M.	17 6 47 M.	17 5 47 M.
FULL MOON	25 0 25 A.	25 11 25 M.	25 10 25 M.	25 9 25 M.

A BRIEF GUIDE TO THE DECADE.

Aug. 1, 1880, fell on Sunday.	Aug. 1, 1886, will fall on Sunday.
" 1881, " " Monday.	" 1887, " " " Monday.
" 1882, " " Tuesday.	" 1888, " " " Wednesday.
" 1883, " " Wednesday.	" 1889, " " " Thursday.
" 1884, " " Friday.	" 1890, " " " Friday.

"Earth's increase, foison plenty,
Barns and garners never empty,
Vines with clustering bunches growing,
Plants with goodly burthen bowing;
Spring come to you at the farthest
In the very end of harvest!" SHAKSPEARE.

SEPTEMBER, 1885.

"*The wind-flower and the violet, they perished long ago,*
And the brier-rose and the orchis died amid the summer glow;
But on the hill the golden-rod, and the aster in the wood,
And the yellow sunflower by the brook in autumn beauty stood."
BRYANT.

Mean time is used unless otherwise specified.

Day of Year.	Day of Month.	Day of Week.	Moon's Constellation.	PLANETARY PHENOMENA.	Latitude of Boston. Sun Rises. H. M.	Sun Sets. H. M.	Moon Rises. H. M.	Latitude of Washington. Sun Rises. H. M.	Sun Sets. H. M.	Moon Rises. H. M.	Latitude of Charleston, S.C. Sun Rises. H. M.	Sun Sets. H. M.	Moon Rises. H. M.	High Water, New York. (*Standard Time.*) Morn. H. M.	Eve. H. M.
244	1	Tu.	♉	☽ 1st. Hamel s. 3.18 M.	5 25	6 33	10 42	5 29	6 29	10 51	5 35	6 24	11 3	. . .	0 18
245	2	W.	♉	☽ 2d. ☌ ☿ ☉ inferior.	5 26	6 31	11 34	5 30	6 28	11 43	5 35	6 23	11 57	0 30	1 23
246	3	Th.	☐	☌ ♄ ☾. ♋.	5 27	6 30	Morn.	5 31	6 26	Morn.	5 36	6 21	Morn.	1 45	2 38
247	4	Fr.	☐	☌ ♂ ☾.	5 29	6 28	0 32	5 32	6 25	0 41	5 37	6 20	0 55	3 10	3 54
248	5	Sa.	♋	Venus sets 7.41 A.	5 30	6 26	1 36	5 33	6 23	1 45	5 37	6 19	1 57	4 29	5 2
36.	14th Sunday after Trinity.			Day's Length:	12h. 53m.			12h. 48m.			12h. 39m.				
249	6	Su.	♋	☾ in perigee.	5 31	6 24	2 45	5 34	6 22	2 52	5 38	6 17	3 3	5 37	6 0
250	7	M.	♌	☌ ☿ ☾.	5 32	6 23	3 56	5 35	6 20	4 2	5 38	6 16	4 10	6 34	6 53
251	8	Tu.	♌	● 8th. ☌ ♃ ☾; ☌ ♃ ☉.	5 33	6 21	Sets.	5 35	6 19	Sets.	5 39	6 15	Sets.	7 25	7 41
252	9	W.	♌	☌ ♁ ☾; ☾ in ♌.	5 34	6 19	6 51	5 36	6 17	6 52	5 40	6 13	6 52	8 11	8 32
253	10	Th.	♍	Algol s. 3.42 M.	5 35	6 18	7 25	5 37	6 15	7 28	5 40	6 12	7 31	8 54	9 14
254	11	Fr.	♍	☌ ☿ ☾.	5 36	6 16	7 59	5 38	6 14	8 4	5 41	6 11	8 10	9 38	9 55
255	12	Sa.	♎	☿ stationary; ☿ in ♍.	5 37	6 14	8 35	5 39	6 12	8 41	5 42	6 9	8 50	10 23	10 39
37.	15th Sunday after Trinity.			Day's Length:	12h. 34m.			12h. 31m.			12h. 25m.				
256	13	Su.	♎	Mars rises 1.16 M.	5 38	6 12	9 13	5 40	6 11	9 21	5 43	6 8	9 32	11 8	11 25
257	14	M.	♏	Vega s. 6.57 A.	5 39	6 11	9 54	5 41	6 9	10 3	5 43	6 7	10 15	11 59	. . .
258	15	Tu.	♏	☾ 15th. ☿ in ♌; ☿ gr.el.W.17°52′.	5 40	6 9	10 37	5 42	6 8	10 46	5 44	6 5	11 0	0 18	0 53
259	16	W.	♏	☾ 16th. Jupiter rises 5.16 M. ♃.	5 41	6 7	11 24	5 42	6 6	11 33	5 44	6 4	11 47	1 19	1 54
260	17	Th.	♐	Saturn rises 11.26 A.	5 42	6 5	Morn.	5 43	6 4	Morn.	5 45	6 3	Morn.	2 29	2 56
261	18	Fr.	♐	☾ in apogee.	5 43	6 3	0 14	5 44	6 3	0 23	5 46	6 2	0 36	3 38	3 58
262	19	Sa.	♑	Uranus sets 6.14 A.	5 44	6 2	1 7	5 45	6 1	1 15	5 46	6 0	1 27	4 37	4 49
38.	16th Sunday after Trinity.			Day's Length:	12h. 14m.			12h. 14m.			12h. 12m.				
263	20	Su.	♑	☿ in perihelion.	5 46	6 0	2 2	5 46	6 0	2 9	5 47	5 59	2 19	5 24	5 33
264	21	M.	♑	Altair s. 7.41 A.	5 47	5 58	2 59	5 47	5 58	3 5	5 48	5 58	3 12	6 5	6 11
265	22	Tu.	♒	☉ enters ♎; autumn begins.	5 48	5 56	3 58	5 48	5 57	4 2	5 48	5 56	4 7	6 40	6 52
266	23	W.	♒	○ 23d. ☾ in ♉.	5 49	5 55	4 58	5 49	5 55	5 1	5 49	5 55	5 3	7 15	7 23
267	24	Th.	♓	○ 24th. ♂ in *Praesepe*.	5 50	5 53	Rises.	5 50	5 53	Rises.	5 50	5 53	Rises.	7 41	7 56
268	25	Fr.	♓	Neptune rises 8.16 A.	5 51	5 51	6 44	5 51	5 51	6 48	5 50	5 52	6 52	8 17	8 30
269	26	Sa.	♈	☌ ♁ ☉.	5 52	5 49	7 18	5 52	5 50	7 24	5 51	5 51	7 31	8 54	9 7
39.	17th Sunday after Trinity.			Day's Length:	11h. 55m.			11h. 56m.			11h. 57m.				
270	27	Su.	♈	☌ ☿ ♃.	5 53	5 48	7 57	5 52	5 48	8 4	5 52	5 49	8 14	9 34	9 47
271	28	M.	♉	☌ ♆ ☾.	5 54	5 46	8 41	5 53	5 47	8 49	5 52	5 48	9 1	10 18	10 34
272	29	Tu.	♉	Fomalhaut s. 10.15 A.	5 55	5 44	9 30	5 54	5 45	9 39	5 53	5 47	9 52	11 6	11 30
273	30	W.	♉	☿ gr. Hel. Lat. N. ♋.	5 56	5 43	10 25	5 55	5 43	10 34	5 54	5 45	10 48	. . .	0 3

Ninth Month. *30 Days.*

BIRTHDAYS OF SCIENTIFIC CELEBRITIES.

1806. — Stephen Alexander, Amer. astronomer.
1814. — James J. Sylvester, Eng. mathematician.
1766. — J. Dalton, English chemist.
1826. — T. Sterry Hunt, Canadian chemist.
1811. — J. M. Gilliss, American astronomer.
1813. — John Cassin, American naturalist.
1707. — G. L. L. Buffon, French naturalist.
1837. — Raphael Pumpelly, American geologist.
1771. — Mungo Park, Scotch explorer.
1839. — Charles S. Peirce, Amer. mathematician.
1798. — F. E. Neumann, German mineralogist.
1778. — H. M. D. Blainville, French zoölogist.
1811. — James Hall, American paleontologist.
1778. — J. G. A. Chevallier, French optician.
1769. — Alexander Humboldt, German savant.
1732. — A. M. Legendre, French mathematician.
1819. — J. B. L. Foucault, French physicist.
1796. — Richard Harlan, American zoölogist.
1813. — C. H. F. Peters, American astronomer.
1809. — D. Houghton, American geologist.
1791. — M. Faraday, English physicist.
1791. — J. F. Encke, German astronomer.
1819. — H. L. Fizeau, French physicist.
1750. — Abraham Gottlob Werner, Ger. geol.
1798. — Elie de Beaumont, French geologist.
1719. — A. G. Kästner, German mathematician.
1824. — Benj. A. Gould, American astronomer.
1807. — Arnold Guyot, Swiss and Amer. geog.

MOON'S PHASES. (*Standard Time.*)

	EASTERN. d. h. m.	CENTRAL. d. h. m.	MOUNTAIN. d. h. m.	PACIFIC. d. h. m.
Last Quarter	2 0 15 M.	1 11 15 A.	1 10 15 A.	1 9 15 A.
New Moon	8 3 43 A.	8 2 43 A.	8 1 43 A.	8 0 43 A.
First Quarter	16 1 15 M.	16 0 15 M.	15 11 15 A.	15 10 15 A.
Full Moon	24 2 55 M.	24 1 55 M.	24 0 55 M.	23 11 55 A.

A BRIEF GUIDE TO THE DECADE.

Sept. 1, 1880, fell on Wednesday.
" 1881, " " Thursday.
" 1882, " " Friday.
" 1883, " " Saturday.
" 1884, " " Monday.
Sept. 1, 1886, will fall on Wednesday.
" 1887, " " " Thursday.
" 1888, " " " Saturday.
" 1889, " " " Sunday.
" 1890, " " " Monday.

"The swamp-oak, with his royal purple on,
Glares red as blood across the sinking sun,
The chestnuts, lavish of their long-hid gold,
To the faint summer, beggard now and old,
Pour back the sunshine hoarded 'neath her favoring eye."
LOWELL.

OCTOBER, 1885.

"*Thou blossom, bright with autumn dew,*
And colored with the heaven's own blue,
That openest when the quiet light
Succeeds the keen and frosty night;
Thou waitest late, and com'st alone,
When woods are bare and birds have flown." BRYANT.

Mean time is used unless otherwise specified.

Day of Year.	Day of Month.	Day of Week.	Moon's Constellation.	PLANETARY PHENOMENA.	Latitude of Boston. Sun Rises. H. M.	Sun Sets. H. M.	Moon Rises. H. M.	Latitude of Washington. Sun Rises. H. M.	Sun Sets. H. M.	Moon Rises. H. M.	Latitude of Charleston, S.C. Sun Rises. H. M.	Sun Sets. H. M.	Moon Rises. H. M.	High Water, New York. (Standard Time.) Morn. H. M.	Eve. H. M.
274	1	Th.	♋	☽ 1st. □ ♄ ☉; ♂ ♄ ☾.	5 58	5 41	11 26	5 56	5 42	11 35	5 54	5 44	11 48	0 38	1 9
275	2	Fr.	♋	Venus sets 7.13 A.	5 59	5 39	Morn.	5 57	5 40	Morn.	5 55	5 43	Morn.	1 56	2 22
276	3	Sa.	♋	☌ ♂; ☾ in perigee.	6 0	5 37	0 32	5 58	5 39	0 40	5 56	5 42	0 52	3 17	3 36
40.	18th Sunday after Trinity.			Day's Length:	11h. 35m.			11h. 38m.			11h. 44m.				
277	4	Su.	♋	☌ ♁ ☿.	6 1	5 36	1 40	5 59	5 37	1 46	5 56	5 40	1 56	4 28	4 43
278	5	M.	♌	Fomalhaut s. 9.52 A.	6 2	5 34	2 50	6 0	5 36	2 55	5 57	5 39	3 0	5 26	5 44
279	6	Tu.	♌	☌ ♃ ☾.	6 3	5 32	4 0	6 1	5 34	4 3	5 58	5 38	4 5	6 15	6 35
280	7	W.	♍		6 4	5 31	5 8	6 2	5 33	5 9	5 59	5 36	5 8	7 3	7 23
281	8	Th.	♍	● 8th. Mars rises 0.52 M.	6 5	5 29	Sets.	6 3	5 31	Sets.	6 0	5 35	Sets.	7 48	8 6
282	9	Fr.	♎	Markab s. 9.44 A.	6 7	5 27	6 30	6 4	5 30	6 36	6 0	5 34	6 44	8 29	8 49
283	10	Sa.	♎	Algenib s. 10.48 A.	6 8	5 25	7 8	6 5	5 28	7 15	6 1	5 33	7 25	9 12	9 32
41.	19th Sunday after Trinity.			Day's Length:	11h. 15m.			11h. 21m.			11h. 29m.				
284	11	Su.	♏	☌ ♀ ☾.	6 9	5 24	7 47	6 6	5 27	7 55	6 2	5 31	8 7	9 53	10 15
285	12	M.	♏	Jupiter rises 4.2 M.	6 10	5 22	8 29	6 7	5 25	8 38	6 2	5 30	8 51	10 34	11 0
286	13	Tu.	♏	Polaris s. 11.45 A. ♁.	6 11	5 21	9 16	6 8	5 24	9 25	6 3	5 29	9 39	11 17	11 49
287	14	W.	♐	Achernar s. 11.58 A.	6 13	5 19	10 6	6 9	5 22	10 15	6 4	5 28	10 28	. . .	0 3
288	15	Th.	♐	☾ 15th. ☌ ☿ ☉ superior.	6 14	5 17	10 58	6 10	5 21	11 7	6 5	5 26	11 19	0 45	0 54
289	16	Fr.	♑	♀ in aphelion; ☾ in apogee.	6 15	5 16	11 52	6 11	5 20	Morn.	6 5	5 25	Morn.	1 47	1 48
290	17	Sa.	♑	Hamel s. 0.17 M.	6 16	5 14	Morn.	6 12	5 18	0 0	6 6	5 24	0 11	2 49	2 45
42.	20th Sunday after Trinity			Day's Length:	10h. 56m.			11h. 4m.			11h. 16m.				
291	18	Su.	♑	Algol s. 1.13 M.	6 17	5 13	0 48	6 13	5 17	0 54	6 7	5 23	1 3	3 45	3 42
292	19	M.	♒	Saturn rises 9.24 A.	6 18	5 11	1 46	6 14	5 15	1 51	6 8	5 22	1 57	4 30	4 37
293	20	Tu.	♒	♄ stationary; ☾ in ♉.	6 19	5 10	2 45	6 15	5 14	2 48	6 8	5 21	2 52	5 12	5 21
294	21	W.	♓	♄ in perihelion; ☌ ♃ β Virginis.	6 21	5 8	3 46	6 16	5 13	3 47	6 9	5 20	3 48	5 54	6 3
295	22	Th.	♓	Aldebaran s. 2.26 M.	6 22	5 7	4 49	6 17	5 11	4 49	6 10	5 19	4 47	6 33	6 44
296	23	Fr.	♓	○ 23d. ☿ in ♉.	6 23	5 5	5 53	6 18	5 10	5 51	6 11	5 18	5 46	7 12	7 27
297	24	Sa.	♈	Uranus rises 4.12 M.	6 24	5 4	Rises.	6 19	5 9	Rises.	6 11	5 17	Rises.	7 53	8 10
43.	21st Sunday after Trinity.			Day's Length:	10h. 37m.			10h. 47m.			11h. 3m.				
298	25	Su.	♈	☌ ♆ ☾.	6 25	5 2	6 37	6 20	5 7	6 45	6 12	5 15	6 57	8 35	8 55
299	26	M.	♉	Capella s. 2.49 M.	6 26	5 1	7 25	6 21	5 6	7 34	6 13	5 14	7 47	9 18	9 44
300	27	Tu.	♉	Rigel s. 2.46 M. ♁.	6 28	5 0	8 20	6 22	5 5	8 29	6 14	5 13	8 43	10 5	10 38
301	28	W.	♊	☌ ♄ ☾; ☾ in perigee.	6 29	4 58	9 21	6 24	5 4	9 30	6 15	5 12	9 43	10 56	11 39
302	29	Th.	♊	Neptune rises 6.0 A.	6 30	4 57	10 25	6 25	5 3	10 33	6 16	5 12	10 45	11 53	. . .
303	30	Fr.	♋	☽ 30th. Canopus s. 3.46 M.	6 32	4 55	11 31	6 26	5 1	11 38	6 16	5 11	11 48	0 48	0 56
304	31	Sa.	♋	☌ ♂ ☾.	6 33	4 54	Morn.	6 27	5 0	Morn.	6 17	5 10	Morn.	2 3	2 5

Tenth Month. *31 Days.*

BIRTHDAYS OF SCIENTIFIC CELEBRITIES.

1814. — H. A. E. A. Faye, French astronomer.

1732 — N. Maskelyne, English astronomer.
1789. — William Scoresby, English explorer.
1803. — H. W. Dove, German meteorologist.

1801. — A. A. de la Rive, English physicist.
1731. — H. Cavendish, English physicist.

1792. — C. G. Gmelin, German chemist.
1802. — Hugh Miller, Scotch geologist.
1827. — J. P. Cooke, American chemist.
1788. — Sir Edward Sabine, Irish geographer.
1810. — J. A. F. Plateau, Belgian physicist.
1608. — Evangelista Torricelli, Italian physicist.
1803. — Robert Stephenson, English engineer.
1814. — Hanns Bruno Geinitz, German geologist.

1632. — Sir Christopher Wren, English architect.

1729. — J. R. Forster, German voyager.
1632. — A. v. Leeuwenhoek, Dutch microscopist.
1808. — Bernhard Cotta, German geologist.

1781 — Chester Dewey, American botanist.
1792. — Franklin Bache, American chemist.
1728. — Capt. Cook, English navigator.
1806. — Alphonse de Candolle, Swiss botanist.
1656. — E. Halley, English astronomer.
1831. — O. C. Marsh, American paleontologist.
1783. — K. W. G. Kastner, German chemist.

MOON'S PHASES. *(Standard Time.)*

	Eastern. d. h. m.	Central. d. h. m.	Mountain. d. h. m.	Pacific. d. h. m.
Last Quarter	1 6 29 M.	1 5 29 M.	1 4 29 M.	1 3 29 M.
New Moon	8 2 31 M.	8 1 31 M.	8 0 31 M.	7 11 31 A.
First Quarter	15 8 20 A.	15 7 20 A.	15 6 20 A.	15 5 20 A.
Full Moon	23 4 22 A.	23 3 22 A.	23 2 22 A.	23 1 22 A.
Last Quarter	30 0 58 A.	30 11 58 M.	30 10 58 M.	30 9 58 M.

A BRIEF GUIDE TO THE DECADE.

Oct. 1, 1880, fell on Friday.	Oct. 1, 1886, will fall on Friday.
" 1881, " " Saturday.	" 1887, " " " Saturday.
" 1882, " " Sunday.	" 1888, " " " Monday.
" 1883, " " Monday.	" 1889, " " " Tuesday.
" 1884, " " Wednesday.	" 1890, " " " Wednesday.

"The sobered robin, hunger-silent now,
Seeks cedar-berries blue, his autumn cheer;
The squirrel, on the shingly shagbark's bough,
Now saws, now lists with downward eye and ear."

LOWELL.

NOVEMBER, 1885.

"On my cornice linger the ripe black grapes ungathered;
Children fill the groves with the echoes of their glee,
Gathering tawny chestnuts, and shouting when beside them
Drops the heavy fruit of the tall black-walnut tree."

BRYANT.

Mean time is used unless otherwise specified.

Day of Year.	Day of Month.	Day of Week.	Moon's Constellation.	PLANETARY PHENOMENA.	Latitude of Boston. Sun Rises. H. M.	Sun Sets. H. M.	Moon Rises. H. M.	Latitude of Washington. Sun Rises. H. M.	Sun Sets. H. M.	Moon Rises. H. M.	Latitude of Charleston, S.C. Sun Rises. H. M.	Sun Sets. H. M.	Moon Rises. H. M.	High Water, New York. (*Standard Time.*) Morn. H. M.	Eve. H. M.
44.	22d Sunday after Trinity.			Day's Length:	10h. 18m.			10h. 31m.			10h. 51m.				
305	1	Su.	♌	Sirius s. 3.57 M.	6 34	4 52	0 39	6 28	4 59	0 44	6 18	5 9	0 51	3 12	3 17
306	2	M.	♌	☿ in aphelion.	6 35	4 52	1 47	6 29	4 58	1 51	6 19	5 8	1 54	4 14	4 25
307	3	Tu.	♍	☌ ♃ ☾; ☌ ♁ ☾; ☾ in ♌.	6 36	4 50	2 54	6 30	4 57	2 56	6 20	5 7	2 57	5 9	5 22
308	4	W.	♍	Venus sets 7.16 A.	6 38	4 49	4 1	6 31	4 56	4 1	6 21	5 6	3 59	6 0	6 14
309	5	Th.	♍	Fomalhaut s. 7.50 A.	6 39	4 48	5 6	6 32	4 55	5 4	6 22	5 6	4 59	6 47	7 2
310	6	Fr.	♎	● 6th. Markab s. 7.53 A.	6 40	4 47	6 11	6 34	4 54	6 7	6 23	5 5	6 0	7 29	7 47
311	7	Sa.	♎	☌ ☿ ☾.	6 42	4 46	Sets.	6 35	4 53	Sets.	6 24	5 4	Sets.	8 10	8 31
45.	23d Sunday after Trinity.			Day's Length:	10h. 2m.			10h. 16m.			10h. 38m.				
312	8	Su.	♍	♀ gr. Hel. Lat. S.	6 43	4 45	6 23	6 36	4 52	6 32	6 25	5 3	6 45	8 50	9 14
313	9	M.	♍	Mars rises 0.15 M.	6 44	4 44	7 8	6 37	4 51	7 17	6 26	5 2	7 31	9 27	9 55
314	10	Tu.	♐	☌ ♀ ☾. ☽.	6 45	4 42	7 56	6 38	4 50	8 5	6 26	5 1	8 19	10 4	10 37
315	11	W.	♐	Algenib s. 8.42 A.	6 47	4 41	8 47	6 39	4 49	8 56	6 27	5 1	9 9	10 41	11 20
316	12	Th.	♐	☾ in apogee.	6 48	4 40	9 40	6 40	4 48	9 48	6 28	5 0	10 0	11 18	. . .
317	13	Fr.	♑	Polaris s. 9.43 A.	6 49	4 40	10 35	6 41	4 47	10 42	6 29	5 0	10 52	0 7	11 58*
318	14	Sa.	♑	☾ 14th. Achernar s. 9.56 A.	6 51	4 39	11 31	6 42	4 47	11 37	6 30	4 59	11 44	0 58	0 44
46.	24th Sunday after Trinity.			Day's Length:	9h. 46m.			10h. 2m.			10h. 28m.				
319	15	Su.	♒	Jupiter rises 2.19 M.	6 52	4 38	Morn.	6 44	4 46	Morn.	6 31	4 59	Morn.	1 48	1 39
320	16	M.	♒	☌ ♆ ☉; ☾ in ♉.	6 53	4 37	0 29	6 45	4 45	0 33	6 32	4 58	0 38	2 38	2 33
321	17	Tu.	♒	Hamel s. 10.11 A.	6 54	4 36	1 29	6 46	4 45	1 31	6 33	4 58	1 34	3 32	3 27
322	18	W.	♓	Algol s. 11.7 A.	6 55	4 35	2 31	6 47	4 44	2 32	6 34	4 57	2 31	4 23	4 22
323	19	Th.	♓	Aldebaran s. 0.36 M.	6 57	4 35	3 35	6 48	4 43	3 34	6 35	4 57	3 30	5 12	5 17
324	20	Fr.	♈	Saturn rises 7.14 A.	6 58	4 34	4 40	6 49	4 43	4 37	6 36	4 56	4 31	5 59	6 9
325	21	Sa.	♈	○ 22d. ☌ ♆ ☾.	6 59	4 33	5 47	6 50	4 42	5 42	6 36	4 56	5 34	6 47	7 2
47.	25th Sunday after Trinity.			Day's Length:	9h. 33m.			9h. 51m.			10h. 19m.				
326	22	Su.	♉	Uranus rises 2.25 M.	7 0	4 33	Rises.	6 51	4 42	Rises.	6 37	4 56	Rises.	7 33	7 55
327	23	M.	♉	☿ gr. Hel. Lat. S.	7 2	4 32	6 8	6 52	4 41	6 17	6 38	4 55	6 31	8 19	8 48
328	24	Tu.	□	☌ ♄ ☾; ☾ in perigee. ☾.	7 3	4 32	7 9	6 54	4 41	7 18	6 39	4 55	7 32	9 7	9 43
329	25	W.	□	Capella s. 0.51 M.	7 4	4 31	8 14	6 54	4 40	8 23	6 40	4 55	8 36	9 58	10 39
330	26	Th.	♊	Rigel s. 0.48 M.	7 5	4 31	9 21	6 55	4 40	9 29	6 41	4 54	9 39	10 47	11 40
331	27	Fr.	♊	Canopus s. 1.56 M.	7 6	4 30	10 30	6 56	4 39	10 36	6 42	4 54	10 44	11 42	. . .
332	28	Sa.	♋	☽ 28th. Neptune sets 5.55 M.	7 7	4 30	11 39	6 57	4 39	11 43	6 42	4 54	11 48	0 45	0 39
48.	1st Sunday in Advent.			Day's Length:	9h. 21m.			9h. 41m.			10h. 11m.				
333	29	Su.	♋	☌ ♂ ☾.	7 8	4 29	Morn.	6 58	4 39	Morn.	6 43	4 54	Morn.	1 49	1 47
334	30	M.	♌	☿ gr. el. E. 21° 21′; ☌ ♃ ☾; ☾ in ♌.	7 9	4 29	0 47	6 59	4 39	0 49	6 44	4 54	0 51	2 53	2 54

Eleventh Month. 30 Days.

BIRTHDAYS OF SCIENTIFIC CELEBRITIES.

1810. — Gen. A. A. Humphreys, Am. engineer.
1815. — G. Boole, English mathematician.
1786. — E. F. Germar, German naturalist.
1744. — Johann Bernouilli, Swiss astronomer.
1798. — Karl Kreil, Austrian meteorologist.
1809. — R. H. Kohlrausch, German physicist.
1818. — E. H. du Bois-Reymond, Ger. physicist.
1781. — G. A. A. Plana, Italian mathematician.
1748. — C. L. Berthollet, French physicist.
1805. — Charles Pickering, American naturalist.
1743. — C. P. Thunberg, Swedish naturalist.
1795. — Thaddeus W. Harris, Am. entomologist.
1842. — Lord Rayleigh, English physicist.
1797 — Sir Charles Lyell, English geologist.
1738. — F. W. Herschel, English astronomer.
1793. — M. Chasles, French mathematician.
1717. — J. le R. d'Alembert, French geometer.
1790. — A. F. Moebius, German astronomer.
1810. — Asa Gray, American botanist.
1821. — F. F. E. Briinnow, Amer. astronomer
1832. — N. A. E. Nordenskiöld, Finnish traveller.
1819. — Joseph D. Whitney, American geologist.
1796. — A. von Ettingshausen, Ger. physicist.
1817. — Charles A. Wurtz, French chemist.
1701. — A. Celsius, Swedish physicist.
1734. — Johann A. Euler, Russ. mathematician.

* Second morning tide.

MOON'S PHASES. (*Standard Time.*)

	Eastern. d. h. m.	Central. d. h. m.	Mountain. d. h. m.	Pacific. d. h. m.
New Moon	6 4 3 A.	6 3 3 A.	6 2 3 A.	6 1 3 A.
First Quarter	14 4 59 A.	14 3 59 A.	14 2 59 A.	14 1 59 A.
Full Moon	22 4 39 M.	22 3 39 M.	22 2 39 M.	22 1 39 M.
Last Quarter	28 8 57 A.	28 7 57 A.	28 6 57 A.	28 5 57 A.

A BRIEF GUIDE TO THE DECADE.

Nov. 1, 1880, fell on Monday.
" 1881, " " Tuesday.
" 1882, " " Wednesday.
" 1883, " " Thursday.
" 1884, " " Saturday.
Nov. 1, 1886, will fall on Monday
" 1887, " " " Tuesday.
" 1888, " " " Thursday.
" 1889, " " " Friday.
" 1890, " " " Saturday.

"Within the hall are song and laughter,
The cheeks of Christmas grow red and jolly,
And sprouting is every corbel and rafter
With the lightsome green of ivy and holly."
LOWELL.

DECEMBER, 1885.

"*The snow-bird twittered on the beachen bough,*
And 'neath the hemlock, whose thick branches bent
Beneath its bright cold burden, and kept dry
A circle, on the earth, of withered leaves,
The partridge found a shelter. Through the snow
The rabbit sprang away." BRYANT.

Mean time is used unless otherwise specified.

Twelfth Month. 31 Days.

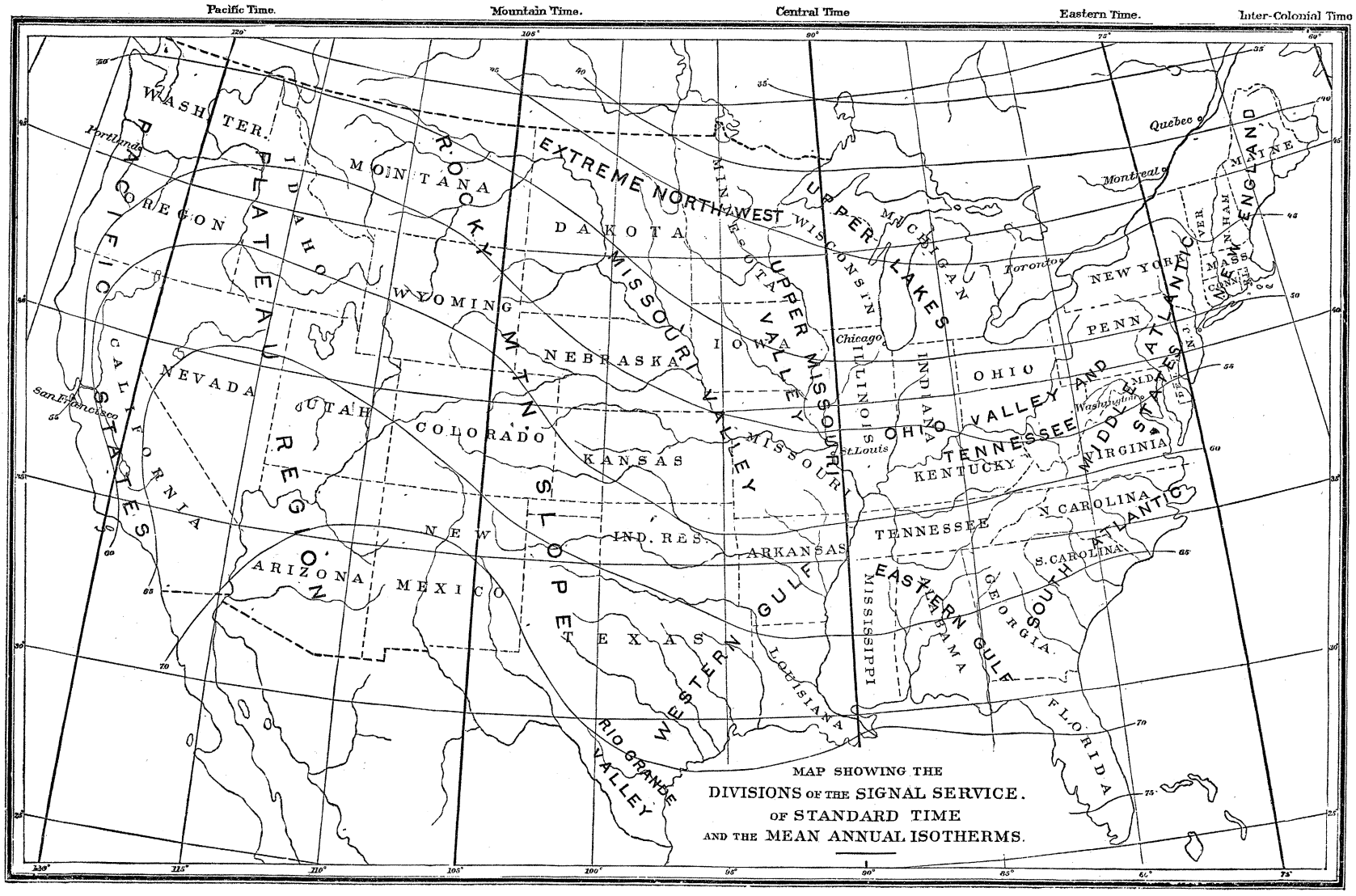
Day of Year.	Day of Month.	Day of Week.	Moon's Constellation.	PLANETARY PHENOMENA.	LATITUDE OF BOSTON. Sun Rises. H. M.	Sun Sets. H. M.	Moon Rises. H. M.	LATITUDE OF WASHINGTON. Sun Rises. H. M.	Sun Sets. H. M.	Moon Rises. H. M.	LATITUDE OF CHARLESTON, S.C. Sun Rises. H. M.	Sun Sets. H. M.	Moon Rises. H. M.	HIGH WATER, NEW YORK. (*Standard Time.*) Morn. H. M.	Eve. H. M.	BIRTHDAYS OF SCIENTIFIC CELEBRITIES.
335	1	Tu.	♏	☌ ♁ ☾.	7 10	4 28	1 53	7 0	4 39	1 53	6 45	4 54	1 52	3 55	3 58	
336	2	W.	♏	Venus sets 7.55 A.	7 11	4 28	2 57	7 1	4 38	2 55	6 46	4 54	2 52	4 54	4 58	
337	3	Th.	♎	□ ♂ ☉.	7 12	4 28	4 0	7 2	4 38	3 57	6 47	4 54	3 50	5 44	5 54	1838. — Cleveland Abbé, American meteorologist.
338	4	Fr.	♎	Algenib s. 7.11 A.	7 13	4 28	5 1	7 3	4 38	4 56	6 47	4 54	4 47	6 32	6 47	1818. — John L. LeConte, Amer. entomologist.
339	5	Sa.	♏	Polaris s. 8.17 A.	7 14	4 28	6 1	7 4	4 38	5 55	6 48	4 54	5 44	7 15	7 33	
49.	2d Sunday in Advent.			Day's Length:	9h. 13m.			9h. 33m.			10h. 5m.					
340	6	Su.	♏	● 6th. Achernar s. 8.29 A.	7 15	4 28	Sets.	7 5	4 38	Sets.	6 49	4 54	Sets.	7 56	8 18	1778. — L. J. Gay-Lussac, French chemist.
341	7	M.	♏	☌ ☿ ☾. ⊻.	7 16	4 28	5 48	7 6	4 38	5 57	6 50	4 54	6 11	8 33	8 59	1786. — J. G. Charpentier, Swiss geologist.
342	8	Tu.	♐	☿ gr. el. E. 47°19′; ☌ ♃ η Virginis.	7 17	4 28	6 38	7 7	4 38	6 47	6 51	4 54	7 1	9 5	9 37	1804. — W. B. Rogers, American geologist.
343	9	W.	♐	☿ stationary.	7 18	4 28	7 31	7 8	4 38	7 40	6 52	4 54	7 52	9 38	10 14	1810. — Theodor Schwann, Belgian physiologist.
344	10	Th.	♑	☌ ♀ ☾; ☾ in apogee.	7 19	4 28	8 26	7 8	4 38	8 34	6 52	4 55	8 45	10 7	10 49	
345	11	Fr.	♑	Mars rises 11.20 A.	7 20	4 28	9 21	7 9	4 39	9 27	6 53	4 55	9 36	10 36	11 26	1781. — Sir David Brewster, Scotch chemist.
346	12	Sa.	♑	☿ in ♌.	7 21	4 28	10 18	7 10	4 39	10 23	6 54	4 55	10 29	11 12	. . .	1731. — Erasmus Darwin, English physicist.
50.	3d Sunday in Advent.			Day's Length:	9h. 7m.			9h. 28m.			10h. 1m.					
347	13	Su.	♒	Algol s. 9.29 A.	7 21	4 28	11 16	7 11	4 39	11 19	6 54	4 55	11 23	0 4	11 56*	1743. — Sir Jos. Banks, English naturalist.
348	14	M.	♒	☾ 14th. ☾ in ♉.	7 22	4 29	Morn.	7 11	4 39	Morn.	6 55	4 55	Morn.	0 48	0 37	1816. — Ernst Werner Siemens, Eng. electrician.
349	15	Tu.	♓	Jupiter rises 0.42 M.	7 23	4 29	0 16	7 12	4 40	0 17	6 56	4 56	0 18	1 40	1 28	1546. — Tycho Brahe, Danish astronomer.
350	16	W.	♓	Aldebaran s. 10.46 A.	7 23	4 29	1 16	7 13	4 40	1 16	6 56	4 56	1 14	2 37	2 26	1834. — Charles A. Young, American astronomer.
351	17	Th.	♈	☿ in perihelion.	7 24	4 29	2 18	7 14	4 40	2 16	6 57	4 57	2 11	3 35	3 29	1493. — Paracelsus, Swiss chemist.
352	18	Fr.	♈	☌ ☿ ☉ inferior.	7 25	4 30	3 24	7 14	4 41	3 20	6 57	4 57	3 13	4 33	4 37	1778. — Sir Humphry Davy, English chemist.
353	19	Sa.	♈	☌ ♆ ☾.	7 26	4 30	4 31	7 15	4 41	4 25	6 58	4 58	4 16	5 30	5 41	1797. — Joseph Henry, American physicist.
51.	4th Sunday in Advent.			Day's Length:	9h. 5m.			9h. 27m.			10h. 0m.					1714. — John Winthrop, Am. math. and astron.
354	20	Su.	♉	Saturn rises 5.6 A.	7 26	4 31	5 39	7 15	4 42	5 31	6 58	4 58	5 21	6 24	6 43	1787. — O. von Kotzebue, Russian navigator.
355	21	M.	♉	○ 21st. ☉ ents. ♑; winter begins;	7 26	4 31	Rises.	7 15	4 42	Rises.	6 59	4 59	Rises.	7 17	7 42	* Second morning tide.
356	22	Tu.	□	☾ in perigee. [♎; ☌ ♄ ☾.	7 27	4 32	5 54	7 16	4 43	6 3	6 59	4 59	6 17	8 6	8 38	1805. — T. Graham, Scotch chemist.
357	23	W.	□	Capella s. 10.57 A.	7 27	4 32	7 3	7 16	4 43	7 11	7 0	5 0	7 23	8 56	9 34	1790. — J. F. Champollion, French Egyptologist
358	24	Th.	♋	Uranus rises 0.25 M.	7 28	4 33	8 14	7 17	4 44	8 21	7 0	5 0	8 30	9 45	10 29	1792. — Charles Babbage, Eng. mathematician.
359	25	Fr.	♋	Rigel s. 10.50 A.	7 28	4 34	9 26	7 17	4 44	9 31	7 1	5 1	9 37	10 34	11 26	1818. — J. P. Joule, English physicist.
360	26	Sa.	♌	□ ♃ ☉; ♂ ♄ ☉.	7 29	4 34	10 36	7 18	4 45	10 39	7 1	5 1	10 42	11 25	. . .	1813. — Joseph Lovering, American physicist.
52.	Sunday after Christmas.			Day's Length:	9h. 6m.			9h. 28m.			10h. 0m.					1756. — B. G. Lacépède, French naturalist.
361	27	Su.	♌	☌ ♂ ☾; ☿ gr. H.L.N.; ☾ in ♌.	7 29	4 35	11 44	7 18	4 46	11 45	7 2	5 2	11 45	0 23	0 22	1571. — J. Kepler, German astronomer.
362	28	M.	♍	☽ 28th. ☌ ♃ ☾; ☌ ♁ ☾; □ ♁ ☉.	7 29	4 36	Morn.	7 18	4 46	Morn.	7 2	5 3	Morn.	1 21	1 21	1822. — Louis Pasteur, French physiologist.
363	29	Tu.	♍	☿ stationary.	7 29	4 36	0 49	7 19	4 47	0 48	7 2	5 4	0 45	2 26	2 24	1818. — C. R. Fresenius, German chemist.
364	30	W.	♎	☉ perigee.	7 30	4 37	1 53	7 19	4 48	1 50	7 3	5 4	1 45	3 30	3 29	1796. — J. C. Poggendorff, German physicist.
365	31	Th.	♎	Neptune sets 3.41 M.	7 30	4 38	2 55	7 19	4 49	2 51	7 3	5 5	2 43	4 32	4 37	1784. — Major S. H. Long, American explorer.
																1796. — John E. Holbrook, American zoölogist.

MOON'S PHASES. (*Standard Time.*)

	EASTERN. *d.* *h.* *m.*	CENTRAL. *d.* *h.* *m.*	MOUNTAIN. *d.* *h.* *m.*	PACIFIC. *d.* *h.* *m.*
NEW MOON	6 8 16 M.	6 7 16 M.	6 6 16 M.	6 5 16 M.
FIRST QUARTER	14 1 22 A.	14 0 22 A.	14 11 22 M.	14 10 22 M.
FULL MOON	21 3 58 A.	21 2 58 A.	21 1 58 A.	21 0 58 A.
LAST QUARTER	28 7 22 M.	28 6 22 M.	28 5 22 M.	28 4 22 M.

A BRIEF GUIDE TO THE DECADE.

Dec. 1, 1880, fell on Wednesday.	Dec. 1, 1886, will fall on Wednesday.
" 1881, " " Thursday.	" 1887, " " " Thursday.
" 1882, " " Friday.	" 1888, " " " Saturday.
" 1883, " " Saturday.	" 1889, " " " Sunday.
" 1884, " " Monday.	" 1890, " " " Monday.


Pacific Time.
Mountain Time.
Central Time
Eastern Time.
Inter-Colonial Time
WASH TER.
IDAHO
MONTANA
DAKOTA
MINNESOTA
WISCONSIN
MICHIGAN
UPPER LAKES
Quebec
Montreal
Toronto
NEW YORK
MAINE
VERMONT
NEW HAMPSHIRE
MASS.
CONN.
R. I.
N. J.
NEW ENGLAND
PENN
OREGON
WYOMING
NEBRASKA
IOWA
ILLINOIS
INDIANA
OHIO
Chicago
Portland
San Francisco
NEVADA
UTAH
COLORADO
KANSAS
MISSOURI
St. Louis
Washington
KENTUCKY
VIRGINIA
MIDDLE STATES
N. CAROLINA
TENNESSEE
S. CAROLINA
ARKANSAS
IND. RES.
NEW MEXICO
ARIZONA
MEXICO
TEXAS
LOUISIANA
MISSISSIPPI
ALABAMA
GEORGIA
FLORIDA
EASTERN GULF
SOUTH ATLANTIC
WESTERN GULF
PACIFIC STATES
CALIFORNIA
ROCKY MTNS
EXTREME NORTHWEST
UPPER MISSOURI VALLEY
OHIO VALLEY AND TENNESSEE
RIO GRANDE VALLEY
REGION OF LITTLE RAIN
MAP SHOWING THE
DIVISIONS OF THE SIGNAL SERVICE.
OF STANDARD TIME
AND THE MEAN ANNUAL ISOTHERMS.